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SOCIETY OF LONDON

ENQUIRY
INTO THE
MEDICINAL VIRTUES
OF
Bristol-Water:

AND THE
INDICATIONS OF CURE
Which it answers.

By GEORGE RANDOLPH M. D.
late Fellow of *All-Souls* College. *Oxford*.

---- Παρ' ἐμ' ἴτασο, καὶ ἴδε' ἔργον.

Hom. Il. ρ'. 179.

O X F O R D,

Printed at the THEATRE, MDCCXLV.

For *James Fletcher* in the *Turl*; and sold by *M. Cooper*
in *Pater Noster Row* London, *B. Hickey* in *Bristol*, and
J. Leake in *Bath*.

Imprimatur,

EUS. ISHAM,

Vice-Can. *OXON*

Apr. 24 1745.

T O

Edward Wilmot M. D.

Physician in ordinary to his *Majesty*,
and

his Royal Highness the Prince of *Wales*;

Fellow of the College of Physicians,

and of the Royal Society.

SIR,

I Humbly offer You this Product of my Studies, in Acknowledgment of many Favours receiv'd from You, and in full Perswasion that No One is a better Judge or a greater Encourager of Writings of this Kind. That I am permitted to address an imperfect Work

to a Person so eminently distinguish'd in
his Profession, is an Honour of which I
shall ever retain the most grateful Sense,
and I shall esteem your favourable Ac-
ceptance of it, as an additional Instance
of your Goodness to, Sir,

Your most obliged

and obedient

humble Servant

GEO. RANDOLPH.

P R E F A C E.

AS I cannot think the Virtues of Bristol-Water sufficiently understood, and believe there are many of the Faculty, who would be glad to be informed, how far they may rely upon it; I hope I may be excused in attempting to explain what my particular Station in this Place obliges me to enquire into, and what I really have taken some Pains to acquaint my self with.

True it is that the general Disorders, for which this Water is of Service, have already been made publick; but the particular Indications which it answers, (the one thing needful for every Body to know before he can judge of it as a Remedy) seem either not truly or not fully explained. Some Writers deal too much in generals, and others who are more particular, have been more earnest in searching into the Nature of its Contents, than observing its Effects; not considering the Weakness of the Foundation they build upon. For, not to mention the many notorious Contradictions of these Writers between themselves, our Reason sufficiently

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ficiently teaches us, that Chymical Analysis is by no means the proper Method of Proceeding in this Case; but that after all our Search, the little Knowledge we have of what is done under the Earth, must ever leave us ill and incompetent Judges of the Products of it; for 'till we are acquainted with all the different Substances there lying hid, and all their possible Combinations, together with the Effects resulting from them, how can we pretend to say, that the Virtues of any mineral Waters depend upon such and such Substances found in them by Chymical Analysis? --- whilst, for ought we know, they may not at all be concerned in the Effects; and if they are, it may be in Conjunction with some one or more other Substances, which we are ignorant of, as we are of the Effects following such Conjunction. Again; supposing we could arrive at a certain Knowledge concerning every separate Ingredient, the Qualities arising from the Mixture might possibly be very different from any thing we find in the Ingredients, and we not be able to produce the Compound as Nature has. ---- But enough of this; Mr BOYLE having long since given his Opinion, ^a "That the Difficulty of securely determining the Effects of Mineral Waters a priori is little,

^a Boyle's Memoirs for the Natural History of Mineral Waters, p. 3, 4.

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“if at all, less than insuperable to Human Understandings. ---- And that the surest Way of knowing them, is by a long and sufficient Experience of their good and bad Effects.”

Waving therefore all Chymical Experiments, as a subsequent Affair, I shall consider the Water as a Medicine sui Generis, which Nature has provided for our Use, and in order to find out the Virtues of it, I shall proceed in the following Manner.

First, I shall give a Medical History of it; (so far as we can trace it) from its first Discovery, until now; endeavouring to shew “what has been the current Opinion of Physicians concerning it; what Diseases it has been principally used and esteemed for, at different Times since; and for what it is now at this Day in Reputation,” thereby attempting to give such a general Idea of this Water, as may conduce to the more exact and extensive Knowledge of it.

And for the better ascertaining of such Cases, as Physicians shall think proper to send here for Relief, I shall in the second Place enquire into the Nature and Cause of such Distempers, as it is found more specifically to hit, thereby endeavouring

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*vouring to find out what Indications it answers;
How far it may be depended upon in the many different Disorders it is good for, and how far not.*

And this being done, I shall in the third Place enter into an Examination of the Properties and Qualities of it, so far as they are discoverable by Chymical or Mechanical Experiments, and shall give an Account of all such Discoveries, as seem any way to have instructed us in the Natural History of it.

Fourthly and lastly, I shall endeavour from the whole to raise a Summary of such Knowledge, as may be fairly concluded from the Premises.

Bristol. Apr. 3. 1745.

Errata.

P. 14. l. 20. for Gugg r. Gagg. p. 15. l. 25. for Starbech r. Harbech. p. 16. l. 21. for were r. seem. p. 18. l. 9. r. there were now. p. 19. l. 9. r. supposed to arise. p. 20. l. 19. for justly r. jointly. p. 21. l. 8. for account r. ancient. p. 31. l. 1. after that r. when. p. 44. l. 25. dele first. p. 57. l. 2. dele and. p. 59. l. 17. dele or. p. 75. l. 11. for contrary r. cooling. p. 99. l. 24. for waters r. water. p. 106. l. 11. for michief r. mischief.

PART I.

A

MEDICAL HISTORY

OF THE

HOT-WELL-WATER

Near *B R I S T O L*.

THE Hot-Well Water Spring rises on the Bank-side of the River *Avon*, about a Mile below *Bristol*, between ^a high and low Water Mark; It is said to have been known long since to the Sailors, who coming by in their Boats, first discover'd it, and used it outwardly (as Tradition informs us,) for the Itch, and healing up of old Sores: But as it is not mention'd by any Writer, nor attested to by any known Facts, 'till after the beginning of the last Century, it was probably, but little regarded, 'till

^a The Spring rises about 26 Feet below High-Water Mark; the whole Difference between this and Low-Water being about 36 Feet.

that Time, when it began to gain a Character as a Diuretick, and so came into Repute for Nephritick Cases ; and its Virtues in this particular seem to be what chiefly contributed to bring the Water into Use.

The first Author that I know of, who mentions it, is Dr *Edward Jorden* of *Bath*, who in his Discourse on Mineral Waters, publish'd in 1632, barely names the *Bristol-Water*, by *Saint Vincent's Rock*^a, but seems, though he liv'd so near, and was no incurious Enquirer, to be very little acquainted with it, in that he ranks it among the Chalybeates, with *Spa* and *Tunbridge Waters*.

The next to him is *Thomas Johnson*, who in his *Mercurius Botanicus* says, he was upon the Spot, 17 July 1634,^b “where from the Clefts
“of the Rocks, says he, issues forth a Spring
“of warm Water, pleasant to the Taste ; it is
“a Water of some repute, and much com-
“mended for ulcerous and calculous Affections
“of the Kidnies, taken inwardly ; and for old
“Sores, applied outwardly. It is in pretty fre-
“quent Use, and not without Success, as I am

^a *St Vincent's Rock* so called from a Chappel, which stood formerly on the Top of it dedicated to that Saint, who was a Native of *Spain*, and suffer'd Martyrdom at *Valencia*. *An. Dom.* 305.

^b *Mercurius Botanicus*, p. 12.

“inform’d by those who have experienc’d it. And this is the first Writer, that I know of, who positively says, what the Water was reckon’d good for. Who first applied it to Ulcers of the Kidnies does not appear: Possibly, as it was a kindly Wash for outward Ulcers, it might be deem’d of equal Service to inward ones, in a Part thro’ which it so manifestly pass’d. Or, as Ulcers are often complicated with Stone and Gravel, the Trial might be unavoidable, and the Success of it first appear from Experience. But be this as it will, it is plain this Water was now in some tolerable Credit, tho’ the precise Time^a, in which its Virtues in any one particular were first discover’d, I cannot learn; nor indeed is it to be expected I should, since there is no fixing the

^a By all the Enquiry I can make of Ancient Persons, now living, they not only say, that they never could learn by what means it was first found out, but also that they never could hear any Account given, when it was first enclosed. For before the late Alterations were made, the Water was enclos’d in a Brick Cistern, about 3 feet long, 2 feet broad, and 4 feet deep; the Bottom whence the Water sprang being unpav’d. Out of the South-side of this Cistern, came a wooden Pipe about 4 feet long, 14 inches square, whose Bore was about 3 inches Diameter. This Pipe emptied itself into a little Pond beneath, about 8 feet square; and in this Pond it was that People used to wash themselves, letting the Waters run from the Pipe upon their Sores: But no one can I find who remembers or can give me any Account when, and by whom this Enclosure was first made.

first Original of that which from many and repeated Tryals, comes gradually into Use.

Dr *Venner* in his second Edition of his *Via recta ad Vitam longam*, publish'd in 1622, says nothing of this Water; whereas in his third Edition of 1650, he has a small Treatise expressly upon it. How far this will warrant us in supposing, that it was in no great repute, 'till after the first of these Dates, I leave to my Reader to judge. In this Treatise he tells us, "that this Water was frequented for no
 "other Use, but the Stone; tho', saith he, it
 "hath also other excellent Qualities; it nota-
 "bly cooleth the Inflammations of all the in-
 "ward Parts, and yet does not offend the
 "Stomach, as some other Waters do, and is
 "withal of a gentle mundifying Quality. It is
 "therefore very effectual against the burning
 "Heat of the Stomach, Inflammations of the
 "Liver and Reins, and adustion of the Hu-
 "mours, being taken with fine Sugar, a Dram
 "to a Pint. In such as have hot Livers, red
 "pimpley Faces, and adusted Humours, I have
 "caused a Tincture of Roses and Violets to
 "be made therewith, with singular Success;
 "In Inflammation, and Siccidity of the Inte-
 "stines, it is good to give with this Water,
 "Mel violar. solut. In Inflammations of the
 "Kid-

Of Bristol-Water.

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“ Kidnies with Obstruction, and where there
“ was withal hot Livers, I have given it with
“ *Chrystall. miner.* with wish'd Effect, for the
“ Distemper of the Kidnies, was not only quick-
“ ly allay'd therewith, but also abundance of
“ Sand, and other droffy matter purg'd off.
“ That this Water is good against the Stone
“ and Strangury, and purulent Ulcers of the
“ Kidnies and Bladder, is evident, by reason
“ of its mundifying Quality. This Water is
“ also good in Ulcerations of the Intestines,
“ with this Proviso, that it be taken with some
“ convenient Adjunct, as *Mel rosar.* to occa-
“ sion the Passage thereof, thro' the Belly, di-
“ verting it from the Veins. This Water is
“ not to be given to such as cannot excrete,
“ and pass it away by Urine, neither is it to
“ be given to such as have cold Stomachs,
“ weak Livers, feeble Brains, and such as are
“ subject unto Rheums; in a word, not to
“ phlegmatick, nor to any that abound with
“ Crudities, or have a cold and moist Habit
“ of Body; for in all such, it will soon in-
“ fringe the natural Heat, breed Rheum, an-
“ noy the Breast, occasion Cramps, and by fil-
“ ling the Body with watry superfluities, incur
“ a Lethargy, Palsy, or some other Debility
“ of the Limbs, and Sinews; as for outward
“ Uses,

“Uses, he says, the Water may assuage the
 “Itch, mundify and palliate old Sores, but no
 “matter of moment is to be expected from it.

This Account lets us into a little farther Knowledge of the Nature of this Water, as a Cooler of the Blood: “It notably cooleth
 “Inflammations of all the inward parts. --- It
 “is of Service in hot Livers and Reins, Adu-
 “stion of the Humours, and red pimply Faces,” all which might perhaps be as well express’d by Scorbutick Heats, for which it now stands famous. And this Quality of it appears farther, in that he informs us, that if this Water is given in cold moist Constitutions, or does not pass by Urine, it will produce cold Diseases. He allows of its Virtues in the Stone and Ulcers of the Urinary Passages, but particularly in the former, for which it was principally frequented; he believes that its good Effects in both are owing to its “cleansing
 “mundifying Quality;” by which I presume he means, that it both deterges Ulcers, and washes away Gravel. And for the same Reason he also thinks it good for Ulcerations of the Intestines; but as to Ulcers of any other Part he is quite silent; from whence I conclude, that it was used for such Ulcers only, as the Water in its Passage, was suppos’d actually to wash

wash and keep clean. As for outward Ulcers his opinion is, that little is to be expected from it.

In 1655. we have a Letter extant from Dr *Maplet* to Dr *Bate*, in which, speaking of a young Lady who had receiv'd no Benefit from a long and continued use of these Waters, "So powerful an Effect have they, says he, in voiding Gravel, that as She has drank them all this while, and discharg'd none, I could almost venture to conclude She has none." And again, "when I consider the extraordinary healing Quality of these Waters, and the little good they have done her, I am apt also to think, She can have no Ulcer in her Kidnies; for I have seen cancrus Sores of the outward Parts, which I thought incurable, heal'd by them, as it were by Miracle, in less time than this Lady has been there. The Method they us'd was, to let the Water (which runs down from a wooden Pipe upon a Pavement beneath) fall upon the Part, and having well wash'd it, to wet a Cloth in the Water, and wrap the Part up with it four times doubled: The very first time of using it, it would give Ease; then the Sore would assuage; then change Colour for the better, and so heal: And the

"Pa-

“ Patient us’d to drink of the Water daily
 “ during the Cure *ad libitum* : Now, I say, if
 “ this Spring is of such wonderful Efficacy in
 “ so very malignant Ulcers of the outward
 “ Parts, why should it not exert it self in the
 “ Kidnies which it runs through, and heal Ul-
 “ cers there ?

The same Dr *Maplet* in a Letter dated 1668.
 written to Dr *Creyghton* Dean of *Wells* (after-
 wards Bishop) says, “ but if you receive little
 “ benefit from what I have propos’d, I really
 “ should advise you to *Bristol* Water ; which
 “ is of excellent Virtue in all Disorders of the
 “ Kidnies, and Bladder whatsoever.” And a-
 gain, in a Letter wrote the *January* following:
 --- “ You’ll consider of the advice I gave you,
 “ about drinking our Waters, and be perswaded.
 “ I hope, to come and try their Effects in the
 “ Spring, when the warm Weather comes on.”

And again, in a Letter dated *Apr. 7. 1669.*
 “ In my opinion you should come to *Bristol*,
 “ to drink our Waters ; which are very bene-
 “ ficial to the Kidnies and Bladder, be the Case
 “ either Stone or Ulcer ; which also greatly
 “ cool and temper the Blood, and thereby
 “ soften the Urine which is discharg’d from it.

In another Letter to Dr *Wall*, he speaks of
Bristol Water, and describes the place whence

it springs, telling him, “it is counted good
“for Nephritick Cafes, and that he rests his
“Cure upon this Water, drank of^a *largely*, up-
“on an empty Stomach, at such times as the
“*Tide permits.*^b ---

These Letters contain the Testimony of
one, who practis'd Physick upon the Place,
and therefore could not be unacquainted with
the Character this Water then bore; and yet
he says nothing more of it than others had
said before him, only he extolls it greatly both
as to its outward and inward Uses. He in-
deed says, that “it is good for all Disorders
“whatsoever of the Kidnies and Bladder:”.
But this can mean no more, than that it is in
general friendly to those parts, because as it
will not suit all, so there are some which it does
suit, which he knew nothing of; it being at
that Time famous for nothing more than for
washing of outward Sores and Humours, and
for calculous and ulcerous Affections of the

^a They drank it formerly in greater Quantities than they do now.

^b It is plain from what has been said, that when the Tide
rose even with the Spring it must mix with it and foul it. But
there was still a further Inconvenience; for altho', when the
Tide rose, the Water would continue clear, 'till it came up to
the Spring, yet when the Tide sunk, it was not so; but the Spring
would continue foul for some hours after the Tide had sunk be-
low it; so that the Times of drinking were but seldom, and
they altering every Day.

urinary Passages. ^a But is it not surprizing that neither of these Gentlemen should specify *what sort of Sores* they more especially heal'd outwardly ; and, as to their inward Use, that they should not distinguish between Stones that are passable and Stones that are fix'd; or tell us of the respective Service they are in each Case? --- that they should confound the Stone in the Bladder with the Stone in the Kidney; and give us no Cautions, concerning the Application of this so powerful Remedy; not even so much as to tell us, when it is of most Service, in the Fit, or out of it; how far cold Constitutions may venture upon it, &c. but only tell us in general, that it is of a cooling or cleansing Nature, and thus by general Words, leave us to guess, at what perhaps they never diligently enquir'd into? As for Dr *Maplet*, he indeed writes only to his particular Patients, and therefore cannot be expected to say so much, as if he had wrote professedly on the Subject; tho' had it had any farther Excellencies, it is probable both would have been ready enough to urge them. That its Virtues in Consumptive Cases were not known at this

^a Dr *M.* differs from Dr *V.* in that he thinks the Water acts by tempering the Blood, and thereby softening the Urine which is discharg'd from it.

Time, appears from Dr *Bennet*, who wrote his *Theatrum Tabidorum* in 1650. In which we do not find a Word said of the Efficacy of *Bristol Water* in this Distemper, tho' this Gentleman was himself in a Consumption, and practis'd Physick in his younger Days at *Bristol*.

I shall now turn to some other testimonies concerning it. In *Fuller's Worthies* printed 1662 we have the following Account. "St Vincent's Well, lying West of the City of *Bristol*,
"under St *Vincent's* Rock and hard by the River, is sovereign for Sores and Sickneses,
"to be wash'd in or drank of, to be either outwardly or inwardly applied; it hath a rusty
"ferrugineous Taste, which it retaineth, tho' boiled never so much. Experience proveth
"that Beer brewed therewith, is wholesome
"against the Spleen, and Dr *Samuel Ward* afflicted with that Malady, and living in
"Sidney-College Cambridge, was prescrib'd the constant drinking thereof, tho' it was costly to bring it thro' the *Severn* and narrow
"Seas, and thence by the River to *Cambridge*." This is so very imperfect an Account, that it is highly probable he knew nothing of the Water, but by Report, which is *tam ficti pravique tenax, quam Nuncia veri*. Nor indeed should I have thought him worth quoting, were it

not that he pronounceth the Water good against the Spleen. A Virtue I am sure does not belong to it, nor can I find out, who first taught it did. Probably as it shewed itself as Diuretick, and might in some scorbutick Hypochondriacks agree well, it was imagin'd to be of no small Efficacy this way, especially as it had been hitherto supposed to be impregnated with Iron, a Character which it will appear from what follows, to have kept much longer than one could believe, if those only had wrote of the Water, who were acquainted with the Nature of it.

In 1672 *Claromontius* publish'd a Treatise *de Aere, Aquis, & Locis Angliæ*, in which he speaks of *Bristol Water*, as good for the Gravel, and Obstructions of the Intestines: As to himself he tells you, they did not agree with him by any means, for they made him puke, and did not pass as they should do by Urine; he fancied them of an acerb Taste, and tells you they are a harsh Water, and that if they do not pass by Urine, they either come up again by Vomit, or gripe the Bowels and cause Ruptures.

As this Gentleman, tho' a Physician, was a Stranger, we cannot expect so accurate an Account of them as from those acquainted with the

the

the Place; especially as he conceiv'd a Dislike to them, so far he says true, that where they do not pass, they are apt to make the Stomach sick, and gripe the Bowels; but as to the acerb Taste, and their being good for Obstructions of the Intestines, he seems rather guided by what others had said, than what he himself had experienc'd. For as it was pronounc'd by *Jorden* to have Iron in it, many would have it, that it had an acerb ferrugineous Taste; whereas no Water seems softer to the Palate than this does. But the ignorant Part of Mankind are ready to assure us of more than they know; and the inquisitive Part so ready to believe them, that we must not wonder at Mistakes of this Nature. And thus between those Writers who are too superficial in their Accounts of this Water, and them who are misinform'd, we are (as in most other Parts of the *Materia Medica*) left very much to our own Experience; but with this Difference, that whereas the Use of other Medicines may be examin'd into any where, this only can be learnt upon the Spot. --- Yet thus far I think, we may fairly collect from what has been said, that whatever might be the Opinion of some particular People, the Water was not yet of any establish'd Credit, except as to cal-

calculous and ulcerous Affections of the Kidnies and Bladder, taken inwardly ; and to divers Sores and Humours applied outwardly.

And this is confirm'd by the Testimony of Mr *Onesiphorus Tyndal* now living, who came to *Bristol* in 1674, at which Time he informs me, that this Water was in use chiefly for the Stone and Gravel ; that People usually wash'd themselves with it for the Itch, with great Success ; but as to any thing further, it was in no Reputation, 'till such Time as it was found out to be a Cure for the Diabetes. The Occasion of which Discovery he assures me was as follows. It happen'd about the Year 1680, that two or three Persons of Note in *Bristol* died of this Distemper ; the Physicians acknowledging and bewailing the Inefficacy of their Art in such manner, as it was look'd upon by every Body to be incurable. One Mr *William Gugg*, a Baker who liv'd in *Castle-Street*, being seized with it, was accordingly despair'd of by all that knew him ; but dreaming one Night, that he drank plentifully of the Hot-Well-Water, and was wonderfully refreshed by it, he was much inclin'd the next Morning to quench his thirst with it, and found it to answer to his Wish so effectually, that by continuing the Use of it, in a few Days he came
abroad,

abroad, gathered Flesh and Strength daily, and recovered to the great Surprise of every Body that knew him. This one remarkable Instance was sufficient to recommend this Water to others labouring under the same Disorder; and accordingly it was found to answer Expectation, and was soon brought into Reputation for it.

In 1688 --- *Etwall* M. D. who is now living came to *Bristol*; He informs me, that this Story was then averr'd to him for Truth; that People then depended on it for the Cure of a Diabetes, but that it had not gain'd Reputation sufficient to draw much Company thither.

In 1690 Dr *Guidot* publish'd his Book *de Thermis Britannicis*, where he has a particular Treatise on *Bristol-Water*; in which he has not only collected all that Dr *Venner* and *Maplet* had said, but adds that it is good for the Wind in the Stomach, the Cholick in the Bowels, a Diarrhæa, Dysentery with Excoriations of the Intestines, but more especially for the Diabetes and *Flatus Hypochondriacus*: for which latter he quotes *Fuller's* Authority, and gives a Copy of a Letter from Dr *Starbech*, Physician of *Bristol*, confirming its Virtues in a Diabetes.

It is very probable, that this new Discovery
much

much excited the Enquiries of Physicians concerning this Water, and that Dr *Guidot* might for that Reason choose to enlarge upon it, tho' he does not seem to have sufficiently acquainted himself with its Nature; else surely he could not pronounce it good in a windy Colick, it being one of its most common Inconveniencies, that it is apt to chill the Stomach and gripe the Bowels: and therefore I am of opinion, that this with his *Flatus Hypochondr.* is of a Piece with the mistaken Notion of *Fuller's* about the Spleen, and perhaps deduc'd from it. His mention of a Diarrhæa is new, and was perhaps one of the first Conclusions from this new Discovery; the Benefit receiv'd in one Kind of Flux, directing them to the Tryal of it in another: And this might farther encourage them to apply it to a Dysentery; especially as it had before been recommended for Ulcerations of the Intestines. But these good Effects of it were built rather upon Surmise than Experience. --- Dr *Guidot* had likewise probably heard that the Water was good for a Consumption and Hectick, another probable Conclusion from its curing a Diabetes: But that he knew very little of the Matter appears from his commending *Bathing* in it (not drinking it) for that Purpose, and wishes

wishes that there was a Receiver at the Spring-head, large enough for People to go in.

About this Time it was, that the City began to think the Water worth their Care, and propos'd securing it from the Tide, which made it very inconvenient for those that needed it; and accordingly in 1691, Sr *John Knight* Mayor of *Bristol* endeavour'd to enclose the Spring, in such Manner as that the Tide should not mix with it; and for this Purpose rais'd a Stonework round it, which being built higher than the Tide ever rose, was conceiv'd sufficient to keep it out: But the Weight of the Water enclos'd alter'd the Course of the Spring, and put them in fear of losing it.

In 1695, the Merchants of *Bristol* granted a building Lease to certain Proprietors, to secure the Spring, and contrive, if possible, that the Water might be had as well at High as Low-water; which Proprietors found the Spring, and made a proper Foundation for Pumps, which now carry the Water near 30 feet high; the Tide-water being kept out by means of Pipes, which carry the Spring-water into the River, and have Valves which open, for to let the Water out, but shut against any that would force itself in. But nevertheless it is found by Experience, that the High Tides will mix

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with

with the Spring, and foul it, (which they can do no other Way than by some unknown Clefs in the Rock) and the Water continues foul for some Time after the Tide is funk. --- From this Time other Persons began to build, and make the Place commodious for the Reception of Company, and so it came by Degrees into the Repute it is in at present.

There were two standing Principles, which every one who was inquisitive into the Nature of the Water might build upon; *First*, Its Virtues in calculous and Ulcerous Affections of the Kidnies and Bladder; *Secondly*, in a Diabetes. Men now began to perceive that its Virtues, as to the first, could not be owing to any forcing diuretick Quality, for if so, how could it cure a Diabetes? and therefore it was more probable, that the Good obtain'd this Way was rather owing to its cooling Nature, by which it might serve to allay the Inflammation and Pain caused by Stone or Ulcer. And by giving Ease it gain'd a Reputation for these Disorders, and that very deservedly; because in Cases where the Stone or Gravel is passable, whatsoever allays the Inflammation not only gives Ease, but room also for the Stone to pass; especially if it supplies the Body at the same Time with Matter to pass, as
Water

Water certainly does. And we observe, that in fix'd Stones the Service done is generally no more than may be accounted for from this one Consideration. And the same may in some Measure be said of Ulcers; tho', as there is another Circumstance to be attended to, we must not make our Conclusions without it; and this is, its Virtues in a Diabetes, a Distemper arising from a Weakness and Laxity of the Kidney: from which it was obvious to conclude, that it had also an astringent Quality, by which it might conduce to the healing and drying up of Ulcers, as well as asswaging the Inflammation attending them; and that it might not only ease Pain and discharge Gravel, but also by strengthening the Kidnies guard against it for the future. --- And this was further confirm'd, in that its Virtues in outward Sores are directly accounted for from these two predominant Qualities; It being good only in such Sores and Humours, where the Indications are cooling and drying. And this new Discovery not only gave Men a better Idea of the Benefits before receiv'd, but also greatly extended the Use of this Water; for now they began to apply it to every Purpose of cooling and astringing. No Distemper was thought too hard for it, in which either or

both of these were indicated. One of the first Conclusions was, that great Good might be expected from it in Diarrhæa's and Dysenteries, and other colliquative Discharges; *next*, that it might be of Service in all Seminal and Uterine Weaknesses; *thirdly*, that all Heats, whether Hectical or Scorbutical, Consumptions, and all Disorders proceeding from the Acrimony of the Blood might be cur'd by it. How far it answer'd in these Particulars will appear in the Sequel of this Discourse. So far is reasonable to believe, that these two Principles of Cooling and Astringing, which now manifested themselves in this Water, were the Ground-work of all the late improved Uses of it; and indeed the true Use of this Water seems to arise from a due Consideration of these two different Qualities. Where they both justly contribute to the Cure, they are little less than Specifick; Where they clash, they are not so much to be depended on. It is therefore incumbent upon the Physician to consider well the Circumstances of every particular Case, and where he finds any Contra-indications, to qualify, if possible, the Inconvenience, and to make them serviceable to the Point he aims at. But least I should be thought not to pay a proper Deference to what others have

have

have said, I shall proceed to give an Account of such Authors, as have taken notice of this Water since the Discovery of its Virtues in a *Diabetes*.

And first, I am something surpriz'd to find so little Notice taken of this Spring by the Writers of Natural History. For, except that *Sr Robert Atkyns*, in his Account and Present State of *Glocestershire* printed 1712, just says of it, that "it is a Remedy famous for divers Diseases, especially the *Diabetes*." I know not of any that have mention'd it. In the late Edition of *Camden's Britannia*, tho' translated and improv'd by so able a Hand, we do not find a Word of any such Thing, tho' both in the Edition of 1695, and in that of 1723, there is a Note upon the Diamonds of *St Vincent's Rock*, nothing near so famous as its Water, *Qualis Gemma micans, pretio sed major*. --- It were indeed to be wish'd, that some one or other of the Physicians of the Place had publish'd their Sentiments of it. But as this has not been the Case, we must content ourselves with such, who if they knew less, presum'd more: For in the Space of forty Years I find but one Author who has wrote on the Subject: which is one *Mr John Underhill*, a Practitioner indeed in Physick in *Bristol*, but by
no

no means qualified, as I am told, for such an Undertaking. This Gentleman finding, as he says, no satisfactory Account of the Water extant, undertakes to give one, and dedicates his Book to the Mayor and Corporation. This Book bears date 1703, and is entitled, *Johannis Subtermontani Thermologia*. It consists chiefly of a Collection of Cases extracted from a List of Cures, which was formerly kept at the Well-house; by which he would establish the Use of the Water, not only in *Diabetes*, *Gravel* and *Scurvy*, but also in *King's Evil* and *Leprous Disorders*, and in short in every thing. “This
 “Hot-well-water, says he, will extinguish the
 “Flame in all *Synochi* and putrid, if not malignant, Fevers: it is *instar omnium* the last
 “and only Refuge in Hecticks and Dyscrasy
 “of Humours. It is of excellent Merit, *a Capite usque ad Calcem*, in all Cephalick Cases,
 “and Ataxy of the Spirits, and Palsies and other
 “Impotencies; and as to external Uses, it is
 “a trusty Asylum in all left off incurable Ulcers,
 “Fistula's, and eroding Sores, if not Cancers:” And in proof of all these wonders, he has his Cases sign'd by the Patients Names. Thus we see what a Medley of Conclusions may arise, when People are left to tell their own Case, and these Relations built upon as
 Mat-

Matters of Fact. --- To understand the Nature of a Disorder, to observe the Operation of Medicines, and give a faithful and exact Account of a Cure, requires more Attention and Capacity than the Generality of Mankind are Masters of; not to mention how very apt we all are to magnify every thing that relates to ourselves. There are doubtless some anomalous Cases, which have met with a Cure from these Waters; But what Conclusion can we draw from hence? only that this like other Medicines will sometimes have very surprizing Effects. Besides it is well known, that hot scorbutick Blood may possibly shew itself in divers terrible Shapes, and yet the *Causa Morbi* be nothing more than what is easily curable by these Waters. I shall however recite the List he gives of the Distempers, for which, he says, the Water was famous in his Time, which, tho' not just, may serve to shew us some of the improv'd Uses. "It is of excellent Merit, says he, in
"all Cachochymy, Cholick, Bilious Vomiting, "
"Cardialgia, Dysenteries and Fluxes of all "
"Kinds, Fevers and all Hectical Cases, all la- "
"visk Sweatings, all Rheumatick Pains, all Her- "
"petes, Pustules, Itch, Scorbute, all Inflamma- "
"tions and sulphurous Eruptions, all sorts of "
"Ulcers whether inward or outward, Asthma, "
"Kings

“Kings Evil, Dysuries, Diabetes, Kidney Gra-
 “vel, Bladder and other Excoriations, it ex-
 “tinguisheth all Thirst, it is rather binding
 “than laxative.” In another Part of his Book
 he observes, that “it is of excellent Use in
 “Sterility, Debility, or any Fluor or Slipperi-
 “ness of the Parts, by its fortifying the Vef-
 “sels, and contempering the Humours,” he
 tells us moreover “of its Virtues in Hæctick
 “and Colliquative Sweats.” From all which
 it appears, that it was looked upon as a great
 Temperer of acrimonious Juices, and as a Bin-
 der and Strengtheners of relax’d Parts, and that
 it was extended to every Disease of which ei-
 ther of these was the suppos’d Cause ; with
 what Success, I fear, our Author is too vehe-
 ment in his Praises to be receiv’d as a credible
 Witness.

In the Year 1725, Dr *Wynter* publish’d his
Cyclus Metasyncriticus, in which he professes
 to give an Account both of *Bath* and *Bristol*
 Water, their several Virtues and Differences.
 But I can by no means think he has acquitted
 himself of his Promise ; nor is it to be ex-
 pected he should, having, as he tells you in his
 Preface, wrote this Performance on board a
 Ship, in his Passage from *Jamaica* in about four
 Weeks. His List of the Diseases for which
Bristol

Bristol Water was then famous is as follows:
 “Internal Hæmorrhagies and Inflammations,
 “as Blood-spitting, Dysentery and immode-
 “rate Fluxes of the Menfes, purulent Ulcers
 “of the Viscera, hence in Consumptions, &c.
 “*Dropſy*^a, Scurvy with Heat, Stone, Gravel,
 “Strangury and habitual Gout, Scorbutick
 “Rheumatism, Diabetes, flow Fevers, Atro-
 “phy, Pox, Cancers, Gleets in both Sexes,
 “Kings Evil.” And yet for all this he is so
 inaccurate as to say in a page or two before,
 that Dr *Venner* had wrote of them 70 Years
 ago, and recommended it in all Distempers
 for which it now stands so famous except the
 Diabetes. The chief Motive that induc’d the
 Doctor to write of this Water, was to oblige
 Dr *Friend* with a Compariſon betwixt the Mi-
 neral Waters of *Bath* and *Bristol*. What he
 ſays of this Matter is as follows, “*Bath* Wa-
 “ters are beneficial where the Secretion is di-
 “miniſh’d: *Bristol* when too much encreaſed.

^a *Dropſy*. Perhaps ſome may be ſurpriz’d, ſays our Author, to
 find *Bristol* Waters preſcribed in Dropſies: but ſince no one can
 doubt that diuretick and drying Medicines are of great Service
 in this Diſeaſe, and it is alſo evident, that *Bristol* Waters have
 theſe two Qualities in a great Degree, *Ergo*. --- But if we conſult
 Experience it will prove the Doctor egregiouſly miſtaken; all the
 Water a Dropſical Man drinks not paſſing but lodging within
 and encreaſing the Diſeaſe.

“ *Bath* attenuates powerfully : *Bristol* increas-
 “ fates. *Bath* is spirituous and helps Defect :
 “ *Bristol* is more cooling and suppresses Pleni-
 “ tude. *Bath* Waters rouse up the too lan-
 “ guid, and quicken the too lazy Circulation :
 “ *Bristol* allays heat, and restrains the too ra-
 “ pid Motion of the Blood. *Bath* invigorates
 “ the Phlegmatick : *Bristol* attemperates the
 “ Cholerick Constitution. *Bath* Waters seem
 “ to be dedicated to the Maladies of the Sto-
 “ mach, Guts and Nerves : *Bristol* to those of
 “ the Lungs, Kidnies and Bladder.” Again,
 “ *Bath* Waters are at variance with a Milk
 “ Course, and *Bristol* never judiciously directed,
 “ but where that may be join’d with Reason
 “ and Success.

Thus from a simple diuretick Water, calcu-
 lated for some few Disorders of the urinary
 Passages, are we now arriv’d at a sovereign Re-
 medy applicable to some of the most stubborn
 Diseases of the Body. For, when once it was
 found to cure a *Diabetes*, nothing afterwards
 was thought too hard for it ; --- it was to stop
 all Fluxes, and temper all Humours. And yet
 this is the first Author who mentions its Vir-
 tues in internal Hæmorrhagies ; which one
 would imagine might have been guessed at
 from the Beginning from its cooling Nature
 only ;

only; especially as its good Effects in bloody Urine must appear from the frequent Use of it in the Stone and Gravel. But when it was once known to have also an astringent Quality, the Application of it to inward Hæmorrhagies becomes very obvious; tho' this seems to have been one of the latest Conclusions made. For, unless what is before said of a Dyfentery be referr'd to Hæmorrhage, I don't know of any Writer that has made the least mention of it before this time, not even *Subtermontanus*, who seems to have omitted nothing that he could possibly alledge in praise of this Water.

There have been since Dr *Wynter's* Book, two farther Treatises published on this Subject, the one by Dr *Keir* in 1739, the other by Mr *Shebbeare* in 1740; but as both these Authors dwell chiefly on the Analysis of the Water, they will come more properly under my third Head: However as the former has given a List of the Disorders in which he thinks *Bristol* Water is principally of Benefit, it will be proper to recite it. After having from the Nature of its Contents deduced the Reason of its Effects, he concludes in the following Manner. "From this Idea of the Vir-

“ difficult to conceive, after what manner it
 “ acts in the Cure of the following Distempers,
 “ (*viz.*) Hæmorrhagies, Inflammations, Scor-
 “ butick and febrile Heats, Cutaneous Erup-
 “ tions, scorbutick Rheumatisms, habitual
 “ Gouts, Gravel, Stone, Strangury, Diabetes,
 “ some Dropsies, Cancers, Kings Evil, Atro-
 “ phy, Consumptions, all which, says he, im-
 “ ply Obstructions of some Vessels, a Viscidity
 “ or Acrimony of the Humours, or a Compli-
 “ cation of these.

But it is now Time that I speak for my self,
 and declare what I think to be the present
 establish'd Virtues of this Water, if happily I
 can hit the prudent Mean,

*Neve operæ desim, neve immoderatus abun-
 dem.*

The *first* and principal Virtue, is that of
 tempering the bad Effects of hot acrimonious
 Blood; generally preventing, often curing,
 Inflammations and Hæmorrhage from this
 Cause, but more especially those of the Kid-
 neys, Womb and Lungs.

It has, *secondly*, been found of great Ser-
 vice in Gleets of both Sexes, and other Semi-
 nal and Uterine Weaknesses; but it is more
 particularly famous for a Diabetes, in which
 it is deemed a Specifick.

Thirdly,

Thirdly, It is a fovereign Remedy in a Hectick Fever ; It is a notable Preservative against the Stone, not only preventing Gravel from gathering, but powerfully discharging it when gathered; and is a friendly Drink in all inward Ulcers, but more especially those of the urinary Passages. How far, and under what Circumstances it relieves these Complaints, will appear under my *second* Head.

As to its outward Uses, it is now very little depended on ; not that I doubt of its good Effects in many Cases, where the Indications are cooling and drying. But People do not care to be at the trouble of Bathing ; and indeed I cannot think it so efficacious as formerly. For, as the Spring-head is now so enclosed as not easily to be come at ; and as the Water for bathing is pump'd into Cisterns at a Distance, it loses some of its Heat, and probably some of its Virtue too. And indeed we advise it now rather as a convenient Cold-Bath than any thing else ; tho' some will go into it, as it comes warm from the Spring. --- But to return to the inward Use of it.

It is found more especially serviceable in all hot dry Constitutions ; moistening and cooling the Body, quenching Thirst, creating Appetite, giving Flesh, and encreasing Strength.

But

But it is rather prejudicial to all cold watry phlegmatick Constitutions; chilling the Body, griping the Stomach and Bowels, binding in Humours, and causing Dropfy and swell'd Legs.

As to the sensible Effects of it on healthy Bodies, they are hardly observable; it generally creates Appetite, provokes a limpid Urine, almost always binds the Body, and, if taken in too great a Quantity, chills the Stomach and Bowels, and sometimes swells the Legs. --- And thus having finish'd my *first Head*, I shall now in the second Place proceed to enquire into the Nature and Cause of such Distempers, as this Water is found more particularly to hit, and first of a Hectick Fever.

P A R T II.

Of such Distempers as may be relieved
by the Use of *Bristol-Water*.

C H A P. I.

On the Nature and Cause of a Hectick Fever.

IT is universally agreed, that the Body is drain'd by Evacuation, the Consequence is often a Hectick Fever; Thus, for instance, Diarrhæa's, Dysenteries, profuse Sweats, Salivation, Diabetes, Hæmorrhagies, and other immoderate Discharges, are the frequent Causes, and known Forerunners of this Distemper. Nor does the reason of this seem very difficult to explain; for whenever the *Egesta* exceed the *Ingesta*, the Body cannot be properly nourished; because the Waste is greater than the Supply; nor will it be in our power by any Increase of Food, to answer for the Expence made. For, as the Blood consists of *active* and *inactive* Parts, and as the latter of these are necessary to qualify the too great Activity of

* Not always, for it may be and frequently is a Cachexy.

the

the former; if these unactive Parts are in great Measure drawn off, as in the Case of Hectical Drains, it will be no easy Matter to recover them. Because, I say, no Food given may be sufficient to answer the Purpose. *First*, as it will find a quick and easy *Exit* at the Outlet made: *Secondly*, as it will be consum'd and carried off by the prevailing Activity of the Blood, much faster than is natural, and in such Proportion as will often frustrate the good Effects of it. Hence Loss of Flesh and Strength, continual Heat, Acceleration of the Pulse, and all other Symptoms of a Hectick ensue; which will come on sooner, and continue stronger according as the natural Constitution is hot or cold, dry or moist; or in other Words, according as the Discharges in a healthful State were before, in Proportion to the Food, great or little.

Taking therefore a Hectick in this simple View, let us proceed and see, whether any Light may be gathered from hence in Hectick Fevers from other Causes.

But first, it may be observ'd, that as this Distemper may proceed from Evacuations made *out* of the Body, so likewise it may arise for want of Aliment taken *in*, and that apparently for the same Reason. Thus we see long Fasting

Obstructions of the *primæ Viæ*, Indigestions, &c. sometimes end in a Hectick; tho' it must be confess'd, that it is not so direct a Consequence of these, as of the foregoing Causes. For, as there is no Drain made, the little Food which is taken in, serves in some Measure to answer the Expence; and though the Blood be not fully supplied, yet the Proportion of the active and unactive Parts being not so much altered, the Consequence is rather a slow nervous Fever, than a Hectick^a; unless the *Ingesta* are very small indeed, or by some Accident the *Egesta* are encreased, or the Constitution is very hot and dry.

One of the most common and obvious Causes of a Hectick Fever is *Heat*, which if continued and constant, will by Degrees produce this Disorder, especially in dry bilious Constitutions. Thus outward Heat of the Sun, immoderate Exercise, heating Food or Medicine, often lay the Foundation for a Hectick: for

^a One great Difference between a Hectick, and Nervous Fever, seems to be this, that the one proceeds from a Drain, which hinders the equable Distribution of Aliment, the other from Want of Strength to effect it; hence the Symptoms of a Hectick are simple and uniform, those of a nervous Fever complex and innumerable, depending sometimes on particular, sometimes on general Weakness; and what still makes them more complicated, are the divers unaccountable Spasms that weak Nerves are ever subject to.

whatever heats the Body, encreases the Proportion of the active Parts, and diminishes that of the unactive, which being once predominant will be able to keep their Ground, and prevail (as was before observ'd) against all Supplies whatsoever. Not that this is by any means the direct Consequence of Heat, which is more apt to cause Inflammation, and Fevers of another Kind. And there is likewise another Consideration from which Heat may cause a Hectick; for as the Rarefaction caused by Heat, both in Fluids and Solids, relaxes and weakens the Fibres of the whole Body, it may happen, that some one or more of the Glands, through Laxity, shall discharge more than they ought, and so a Hectick Fever ensue, from Inanition, as before.

Another Cause of a Hectick Fever similar to this is the undue Use of *active Medicines*, such as tho' they may not *primarily* of themselves heat the Blood, yet do it *secondarily* by stimulating the Solids or encreasing the Secretions; of the first Sort are *Antimony*, *Guaiacum*, and other stimulating Medicines, which actuate the Fluids by increasing the Motion of the Solids; of the second is *Mercury*; the continued Use of which, even without Salivation, encreases the Secretions: and is found
very

very pernicious to hot and dry Conſtitutions. --- So that from both there is of Neceſſity a Waſte made, whenſoever a Heſtick is the Conſequence.

Other manifeſt Cauſes of this Fever are Exceſs of *Venery*, divers Sorts of *Fever*, and long *Watchings*, or other great *Fatigue*; all which are plainly reducible either to Heat, or Drain, or both.

Fevers in particular are frequently obſerv'd to end in a *Heſtick*, and ſometimes to be complicated with it. For, as a Perſon in a Heſtick Fever is very ſubject to Inflammations, it often happens, that he is attack'd with two Fevers at once, an *Inflammatory* and a *Heſtick* one; which latter will be ſo far from giving Place to the former, that it will appear the ſtronger for it, and conſequently be the more dangerous. And on the other Hand, an *Inflammatory* or other acute Fever may produce a *Heſtick*; and that, either before or after its Criſis: For if it meets with a dry bilious Conſtitution, a Heſtick may ariſe even before the Fever is come to its Height, and be complicated with it: much more may it follow after the Fever is over; for as there is hardly any thing that quickens the Circulation, and exhauſts the Body more than a Fever, nothing

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will

will lay a more likely Foundation for it. And accordingly we see it is the Effect of such Fevers chiefly, which heat the Body most; such as are all those of the *Inflammatory* Kind that run high, especially the *Causus*, the Effect of hot Climates, and in such whose Blood has not in the Course of Cure been properly diluted with cooling Liquors.

But there still a farther Difficulty remains, which is to explain, why a Hectick is found to be so common a Consequence of the *Scurvy*? why it oftentime attends a *Dropfy*? and why it generally follows upon Ulcers of the Lungs and other Parts?

The *Scurvy* which produces a Hectick is for the most part of the hot Kind, and is found to be the frequent Forerunner of a Consumption, causing Inflammation and Exulceration of the inward Parts. If a Hectick arises from a simple *Scurvy without* Inflammation of any particular Part, it may be accounted for in the same Method as it is from heating Food or Medicine; if *with* it, it is reducible to what is said of Fever or Ulcer. But it is here to be observ'd, that a cold *Scurvy* is by no means to be excluded from having the like Effects; *First*, as it may be the Cause of Inflammation and Exulceration, as well as the hot; *Secondly*,

as

as it is exceeding apt to foul the Glands; which if it happens in the Lungs will cause a Consumption, as will appear more particularly hereafter, when I come to treat of the *Phthisis Pulmonaria*.

The *Dropfy* causes a Hectick in that, tho' the Moisture does not go out of the Body, yet it tends all to one Point: and therefore in Respect of the other Parts, the Water in the Abdomen must be consider'd as an *Egetum*, by which the Body is drain'd faster than the *Ingesta* can supply and make up for.

That inward Ulcers not only of the Lungs, but also of the Liver, Mesentery, Kidnies, Womb, and other Parts of the Body, produce a *Hectick*, is an Observation as old as *Galen*; but the Cause *why* has not perhaps been sufficiently explain'd.

It is confess'd on all Hands, that Ulcers are the Consequence of a preceding Inflammation, which not being discuss'd in Time, forms itself into *Pus*, which is usually called an Abscess or *Imposthume*^a, and this when broke leaves an Ulcer. From the Inflammation, during the making of this *Pus*, we well know there is considerable Fever rais'd, which may be of itself sufficient to bring on a *Hectick* Fever. When the *Pus* is made, this Fever abates, but

^a Corruptly for *Apostem*.

then another arises (as I conceive) from a new Inflammation caused by the continual fretting of the Matter detain'd in the Ulcer, which will be *Stimulus* sufficient to raise the Circulation, and destroy the Balance of the active and unactive Parts. For tho' the Inflammation in this Case may be small, yet as this Fretting never ceases, nay encreases, so long as the Ulcer remains unhealed, the Fever, tho' at first hardly perceptible, will in Time have the Effects of other Fevers; which greatly exhaust the Body, and reduce it sooner or later (according to the Nature of the Ulcer, and the Constitution it meets with) to a *Hectical* State.

I know this Fever has been accounted for from the *Absorption of Pus*, which getting into the Blood and circulating with it, obstructs the Vessels as it passes, and so produces this Fever: And as a Proof of this, it is said, that we often find *Pus* will pass the Kidnies, Salivary Glands, or other Emunctories, without any Imposthumation of such Parts. But as this may be accounted for in a much simpler Way by the *Membrana cellulosa*, which is the Seat of all Imposthumations, and is spread over every Fibre of the Body, and may communicate them to any Part, so the Passing of this *Pus* thro' the minutest Vessels, and the Secretion of it afterwards

wards, in the ſame Shape it was firſt taken in, is no very plausible Conjecture, and ought to be ſupported with better Proofs, than ever I yet heard for it, before it be admitted for true. I am therefore rather enclined to believe, that this *Pus* is not *abſorbed* at all, but that, on the contrary, Nature is very induſtrious in pushing it forth out of the Body ; otherwiſe I do not ſee how Matter could ripen, and form an Abſceſs, and that in many Caſes againſt great Reſiſtance ; nor indeed how it comes to paſs, that old Ulcers of the Legs, and Iſſues, ſhould be ſo great Derivatives of noxious Humours, which as they are hardly ever kept perfectly clean, would ſurely on this Suppoſition be not ſo ſafe, much leſs ſo beneficial, as Experience tells us they are : it therefore ſeems probable, that the Reason aſſigned is the truer Cause of theſe *Heſticks*.

From the whole therefore may we not ſafely conclude, that all *heſtick* Fevers proceed from the active Parts of the Blood prevailing over the unactive? which is occaſion'd, either by the too plentiful Ingeſtion of ſuch things as encrease the former, or a too great Egeſtion of the latter ; ſo that *Inanition* muſt ever be conſidered as a Circumſtance eſſentially requiſite towards the Production of a *heſtick* Fever, and

and that such Inanition in particular, as deprives the Blood of its unactive Parts: For although this Fever may be acquir'd by the Ingestion of such things as encrease the Activity of the Blood, yet, as I have already observ'd, this is not the direct Consequence: for the active parts never take Possession, unless where they are able, first to subdue and expel the Power of their great Antagonists, the unactive; which is brought about chiefly by encreased Circulation or encreased Secretions: the latter directly and necessarily; the former sometimes directly, but often secondarily, by causing Inflammation, Hæmorrhage, Fevers, &c. of which a *Hedick* is the frequent Consequence.

C H A P. II.

On the Cure of a Hedick Fever.

IF we may be allowed to build upon the Principles laid down: The first and most general Indication of *Cure*, will be to guard against the Evacuation made, and, if possible stop the Drain; which is effected, by taking away the Causes of it, (*viz.*) encreased Circulation, and encreased Secretions. Encreased Circulation is caused by too great Activity of the Solids or Fluids, which must be provided against

against, *first*, by abstaining from all such Things as may either heat the one, or stimulate the other; *secondly*, by administering such Remedies, as shall lower the præternatural Activity of both. *Encreased Secretions* arise either from encreased *Circulation*, which consumes and carries off the Humours too fast; or from *weak Glands*, which if they are by any Accident whatsoever so loaded as to be thereby weaken'd, or so weaken'd as to be thereby loaded, their Discharges will be encreased. When encreased Circulation encreases the Secretions, the Cure of the Cause is the Cure of the Effect: When the Glands are in fault, tho' there are divers Methods made use of for the Remedy of this Evil, Yet, I believe, they may in general be reduced to *Derivatives* and *Astringents*. Other various Methods may indeed take place by Way of prevention, according to what we fear; but when the Secretions are once actually impair'd, tho' some Regard may be had to the original Cause, yet, I say, we do in general depend on Derivatives and Astringents. But to be more particular.

And first, as to the Activity of the Fluids; which the Art of Physick informs us may be allayed these several Ways, by *Bleeding*, by *Diluting*, by *Acids*; by *cooling Salts* and *Herbs*;
F by

by *Incrassants* and *Emollients*; of which in their Order.

Bleeding is what indeed we often have Recourse to in *Hætick* Cases, when we would prevent Inflammation of any particular Part, and is greatly to be relied on, where a *Hætick* is not already form'd, but apprehended from this Cause: But in general it by no means seems to answer the Indications requir'd; for, *first*, it is not to be expected, that Evacuations of any kind shall be beneficial in a Fever, of which they are the immediate Cause; nor because Bleeding is of Service in *plethorick* Heats, does it therefore follow, that it will allay Heats arising from *Inanition*. *Secondly*, it is contrary to one great End we must always aim at in the Cure of a *Hætick*, which is giving Strength; the Loss of which is a Circumstance necessarily attending this Disorder, and as necessarily to be attended to. I cannot therefore think any good can be expected from Bleeding in a *Hætick* Fever, as such; unless it be administered as a preventive of Inflammation either as a Cause or a Consequence.

By *diluting* Medicines I would be understood to mean those of the watry Tribe only, such as small Teas, Whey, Barley-Water not boil'd up into an *Incrassant*, or otherwise mix'd with

Pectorals

Pectorals. And these in Theory seem to promise very fair, in that they give a Supply to the Waste made, and that of such cooling Particles as the Blood now needs to allay its Heat and soften its Acrimony. But they do by no Means answer in Practice: And that, as I conceive, for the following Reasons. *First*, because they are so easily secreted, that they run off as fast as they are taken in; *Secondly*, being so secreted, they contribute to the farther Relaxation and Weakness of such Emunctories as are already overcharg'd, and so encrease the Disorder one Way more than they remedy it another; *Thirdly*, because they carry off with them several nutritive Particles, which might otherwise have remain'd in the Body to good Purpose, but are now wash'd away. And the same may be said of *Acid* Liquors; only adding, that as they stimulate the Solids they will run off quicker, and be more apt to do hurt than simple watry ones, which have no Stimulus. And as to the stronger *Mineral Acids*, if it be ask'd, why that, which is so powerful in allaying the Heat of putrid Fevers, should be found so prejudicial in Hectical Heats, I answer, that the Benefit obtained in these Fevers, does not arise so much from their tempering the Heat of the Fluids, as

from their stimulating the weaken'd Solids, and thereby promoting Sweat; and hence it is, that join'd with Cordials they become more efficacious: For if they did immediately resist and temper the Heat of the Blood, as is generally believ'd, I cannot see why they should be mix'd with warm Medicines, or how they could do such hurt in Hectick Fevers, as from all Antiquity they have been observ'd to do, and which it is manifest they must do, if they act by Stimulation.

Thus as to the Intention of tempering the Heat of the Blood, we are reduc'd to cooling *Salts* and *Herbs*, and *Incrassants*: And it must be acknowledg'd, that the former may be of Service where the Strength admits of them; but it is upon the latter chiefly, that we must depend; under which I comprehend almost the whole Tribe of Consumptive Medicines, such as *Milk*, *Snails*, *Jellies*, *Flummery*, *Sago*, *Saloop*, *Broths*, *Vipers*, *Gum. Arab.* *Gum. Tragac.* *Whites of Eggs*, *Cremor Ptisanæ*, *emollient Pectorals*, &c. which, as they are of such signal Service, will deserve some Explication of their Virtues. And they arise, *first*, from their power to restrain the too great Mobility and Fluidity of the Blood, by which Means they not only abate the Fury of the active Parts, but also

give

give such a Consistence to the Fluids, as will in some Measure prevent their running off too fast, whereby they nourish and give Strength at the same Time that they allay Heat; and to answer every Indication of Cure, providing not only against encreased Circulation, but also against the Encrease of Secretions. But the Misfortune is, that in many Cases the Stomach cannot receive nor digest them: and not only so, but when a Hectick once begins to be dangerous, and needs them most, tho' the Fluids are so active, yet the Solids lose their Strength, and have not Force sufficient to blend and mix together such Parts as might be of Service. And as this Failure of Strength encreases, the Fluids themselves will lose all their Activity, and be so far from receiving Benefit from Incrassants, that they will require *Volatiles*, as the only Method left of keeping the Machine in Motion.

Let us now see what Remedies we are to have Recourse to, in order to quiet the too great Activity of the Solids. And here it is to be observ'd, that if a Hectick arises from Heat, whatsoever checks the Activity of the Blood, will also in like Manner affect that of the Solids, which depends upon it. But if the Hectick arises originally from Stimulus, we must

must by all Means attempt to take it off; and if it is such as is not in our Power to remove, we are then to give such Remedies as serve to allay the Effects of the Stimulus, which are principally *Opiates*, and *Emollients*. There is Caution to be had in administering *Opiates*; because they have only a temporary End, to pacify the Hurry of the Spirits, to relieve a particular Symptom, or procure Rest, but cannot be relied on, as to any lasting Effect. Our chief Dependance therefore must be on *Emollients*, such as are soft pectoral or oily Medicines; which, besides their smooth lenient Qualities, do in some Measure answer the Purpose of Incrassants, and are generally prescrib'd in some Shape or other, in all Hectick Fevers. And here it may be proper to observe, that the nearer they approach to Incrassants, the better they are; because all thin watry Emollients are apt to relax too much and encrease the Secretions one way more than they restrain them another: And agreeably to this, *Milk* has been recommended in all Ages, as the sovereign Remedy, which allays Stimulus, and strengthens at the same Time.

It now remains, that we should treat of the several Methods of Cure, made use of in the
Stop-

Stoppage of *encreas'd Secretions*, which, as I have before observ'd, may be in general reduc'd either to Derivatives or Astringents. The Doctrine of *Derivatives* is founded on this Maxim, that the Encrease of one Secretion is the lessening of another; but whoever considers how little it is in our power, to encrease what Secretions we please; and where we can do it, how little it often proves to the Purpose, will not rest much on this Notion, except in such Cases, where Experience warrants the Event. We should therefore carefully observe, what particular Methods of Derivation have been found by Experience, best to answer the End we aim at; whether *Diaphoreticks*, or *Diureticks*, or *Purges*, or *Vomits*, or *Issues*, or any other Method can most safely or surely discharge the Humours we would draw off. For whoever seeks Relief from either of these at Random, without considering their respective Powers in Relation to the Case in Hand, will not find Practice answer to Theory, and in most Cases will probably do more harm than good; for Counter-Evacuations of all Kinds, if they do not relieve, will of Necessity hurt, because they add so much as they discharge to the Cause of the Distemper; and therefore, as I say, are not to be
ven-

ventur'd upon, except in such Cases, where Experience warrants the Success, and even then are frequently not sufficient to stop a Flux of any Continuance. If indeed the original Cause of a Hectick Fever be in some particular Glands, which are weak, and discharge more than they ought, *Derivations* may be of Use: But if a Hectick from other Causes encreases the Secretions, this does not seem to be the proper Method of proceeding.

What then are we to expect from *Astringents*? where we indeed know of an Astringent, that will directly act upon the Parts affected, much good may be expected from it. But this is what in very few Cases we can pretend to, and therefore we make use rather of those that are powerful, than such as are specific; the Misfortune of which is, that they act generally upon other Parts, and not upon the Part affected; or at least act more strongly upon one, than the other: the Consequence of which is, that the Disorder is encreas'd rather than diminish'd by them; the Part affected being still weaker in Respect of those other Parts, than it was before. But when there is a general encrease of many Secretions, what particulars can we trust to? must we not muster up all our Forces, and do our utmost

Can the strongest Astringent do too much? answer, yes; for if they constringe the Parts affected too powerfully, they screw them up to a Point they will not admit of, and therefore instead of strengthening, strain and weaken them. Hence we see that common *vulnery Herbs*, slight solutions of *Vitriol*, *testaceous Powders*, &c. often do more Service, than the most powerful Astringents; and hence perhaps it is that the subastringent Quality of *ristol-Water* takes place in this Disorder.

If then such are the Difficulties arising in this Disorder, that its main Indication of Cure cannot well be answered by any known Method or Medicine, how valuable must that Water be, which not only Experience, but Reason also pronounces so effectual in this Case, as almost to deserve the Name of a Specifick? For if it both mitigates Heat, and strengthens the weak Glands at the same Time, it strikes directly at the two primary Causes of this Disorder, *encreas'd Circulation*, and *encreas'd Secretions*. But that which renders it so effectual to the Purpose is, that it is slight in its Operation, that it cools without weakening, and constringes without overacting its Part, a Mean perhaps only attainable by the Preparations of Nature, who can fit her Instruments to her

work, and seems here to have join'd these two Qualities together in such nice Proportion, as not only to counteract the Inconveniencies arising from each of them *if single*, but also to adapt them to very surprizing Purposes.

As therefore Incrassants answer to both Indications of *encreas'd Circulation* and *encreas'd Secretions*, by giving Consistence to the Blood so likewise does *Bristol-Water*, but in a different Way, namely by astringing the Solids and cooling the Fluids at one and the same Time. And it is more to be relied upon in dangerous Cases, because better adapted to the weak State of the Body: nay both, if Occasion require may be join'd together; for as *Bristol-Water* exceeds all other Medicines in this Disorder so also it interferes with none: And whatever Helps are thought necessary, are so far from being excluded, that they will in all probability be assisted by it.

And thus much I have thought proper to observe of the Effects of *Bristol-Water* in general, which may serve to rectify the Opinion of such who suspect it to be little better than common Spring-water, a Notion favour'd by the little good done by it at a Distance, and confirm'd perhaps by many Miscarriages upon the Spot. But whoever considers that the

Cases

Cases sent here are for the most part very difficult of Cure, and some of them quite past it, will be enclin'd to make great Allowances and not condemn us, for what we do not pretend to. But I now proceed to *Particulars*; for as *Generals* convey little or no Knowledge, and it is my Desire to give a full and satisfactory Account of these Waters, I shall follow a Hectick Fever through all its Branches, as the best Clue whereby we may unravel the whole of what is to be expected from it. The Heads, which I shall proceed upon, are laid down in the following Table, under which I have endeavour'd to comprehend Hecticks of all Denominations whatsoever.

General Cause from	Inanition	which is either from	Hæmorrhage	which is from	Encreas'd Circulat.
			or		or
			Encreased Secret.		Relax'd Glands
Encreas'd Circul.	is from	Stimulus of the Solids	or	Activity of the Fluids	which sometimes produce a Hectick <i>primarily</i> , sometimes <i>secondarily</i> .

C H A P. III.

Of Hæmorrhage.

LET us then begin with *Hæmorrhage*; which a Hectick must be consider'd not as a *direct*, but an *accidental* Consequence. For the End of Hæmorrhage is for the most Part *Cachexy*; except where the Constitution is hot, the Person young, the Bleeding gradual, and continued. It is still farther to be observ'd that Hæmorrhage may not only be the Cause of a Hectick, *primarily*, from bare Inanition only, but also, *secondarily*, in that if *inward* it frequently ends in Ulcer, and this more especially if in the Lungs. But as this will come under another Head, I shall confine my self at present to such as end in Hecticks from *Inanition*. And this may possibly be the Effect of almost any Hæmorrhage whatsoever. But as the natural Consequences of many of them are very different, and those such as *Bristle Water* can be of no Benefit to, neither as to their Causes, or their Effects; it will be proper to distinguish such particular Hæmorrhagies, as are more especially dispos'd to tend this Way, as the only Cases which we properly have to do with, observing only in general that in all Hæmorrhagies, if a Hectick arises

Bristol Water will be indicated, as a proper, if not an effectual, Remedy. Before I proceed, it may be proper to take Notice, that Hæmorrhagies are oftner the *Consequence* of a Hectick, than the *Cause* of it; but as whatsoever is said of the Efficacy of *Bristol* Water elsewhere in the Cure of a Hectick, is manifestly applicable to that Sort, it is needless for me to enlarge particularly upon them.

Of all the Hæmorrhagies which more particularly dispose the Body to a Hectick, the two principal are *Intestinal* and *Uterine* Fluxes; whether it is that, these Bleedings flowing from Parts remote from the Heart, the Vigour of the Circulation is better kept up by the *majora Vasa*, than in other Hæmorrhagies; whence the Heat of the Blood is preserv'd entire, and upon Evacuation more likely to prevail; --- or, that these Parts being the necessary Receptacles of the more unactive Blood, this being discharg'd, the active becomes predominant; --- or, that sharp Humours being the frequent Occasion of these Fluxes, do in themselves dispose to Hectick, so that there is a Tendency towards it, not only *derivatively* from the Evacuation made, but *originally* from the very same Causes which dispose to such Evacuations; --- Whichever of these is the Case,

Case, a Hectick Fever is not the *constant*, tho' a *frequent*, Consequence of this Disorder; it often ending in *Cachexy* and *Dropsy*.

If we examine into a *Dysentery*, and the several Causes of it, we shall find that it chiefly arises from sharp Humours falling upon the Bowels, which irritating the Parts, throw them into strong expulsive Convulsions, exciting Pain and bloody Stools; hence it is so rife in hot Climates, where the Heat of the Sun renders the Humours acrid, and the cold and moist Nights strike them inward; hence also we observe it in Camps and in Prisons, especially if in damp Places, where the Food is none of the best, and the Air the very worst that can be; and hence it is, that it shews itself in Autumn, rather than any other Time of the Year, when the Humours being exalted by the foregoing Heat of the Summer, are now thrown in upon the Bowels by the Evening and Morning Colds; and that more especially, if by indulging in cold Fruits, which are now in Plenty, you chill the Bowels, and invite Humours that Way. For the Weakness of the Part must be consider'd as contributing to the Complaint, and the Violence of it; and is often of itself sufficient to cause it: Thus we ob-

observe it to be not only the Consequence of Diarrhæa's, but also common with such whose Bowels are either accidentally or constitutionally weak; and that in many Cases it is the Forerunner of Death. This then being acknowledged, can there be any thing better adapted to both Indications of Cure than *Bristol Water*, and what is there that we may not expect from a Medicine, which both tempers the Acrimony of the Juices, and strengthens the weak Part? But, I fear, upon Tryal it will not answer to these promising Conclusions. For, *first*, it is found to be so far from tempering the sharp Humours, that it rather chills the Bowels and encreases the Effects of them: *Secondly*, its Astringency is so slight in comparison of many other Medicines, that it is not of Force sufficient to put a Stop to the Violence of the Flux: *Thirdly*, it contradicts the great end we aim at, of promoting Perspiration and throwing the Humours outwards; and besides these, there are so many other Considerations, which for the most part forbid it, that I cannot much recommend it. However, it must be acknowledged, that in hot Constitutions, where the Bowels are tolerably strong, and the Discharge rather continual than immoderate, it may in the Course
of

of Cure be given with Success, and that more especially, if an Hectical Atrophy appears, or inward Ulcers are apprehended; but where Dropsy or Schirrhus is the Consequence, I look upon it as absolutely hurtful.

It now remains that we turn our Thoughts to *Uterine Bleedings*, which are so far allied to a Dysentery, as to proceed generally from the like Causes, but with this Difference, that whereas sharp Humours are the principal Source of the one, which by falling on the Bowels rather make them weak, than find them so; the foundation of the other chiefly lies in the Weakness of the Part, which yields to good Blood as well as bad, and will often arise without any material Fault of it, either in Quantity or Quality. That the Womb is more peculiarly subject to Disorders arising from weak Vessels appears, as from many other Causes, so in particular from its ever being in a State of alternate Dilatation and Constriction; whereby, if its Blood-Vessels either fill too fast, or restore themselves too slow, the Part is of Necessity loaded, and a Hæmorrhage will be more apt to follow this than Plethora's of another Part; because, if we may give Credit to the most skilful Anatomists, the Vessels from which the

Menses flow, and which serve at other Times to empty the overcharg'd Womb, and open at their Extremities, and yield to a much less pressure than would cause a Rupture; as is requisite in other Parts, before a Hæmorrhage ensues. And hence probably may be deduc'd the Reason, why *Bristol Water* is of more eminent Service in this, than in other Hæmorrhagies: for though it is of Benefit in all Hæmorrhagies proceeding from Heat and Acrimony of the Blood, and will do its Part in this, so far as it arises from this Cause, yet here it assists us still further, and that in a most material Point: For if the Fault lies in the Laxity of the Part, and *Bristol Water* is able to constrict and strengthen that Part, (which daily Experience teaches us it is,) it strikes at the Root of the Disease, and answers the principal Indication of Cure. And accordingly we ought to distinguish between Hæmorrhagies arising from Humours thrown upon the Part, being otherwise strong and in due Tone; and those which arise from Humours lodging there, because the Parts are weak: For in the first Case, tho' *Bristol Water* may be of Service, it by no means answers the chief End, which is to draw off the Plethora from the Womb; whereas in the latter it does, which is to

H strengthen

strengthen it. We are to distinguish also between Hæmorrhagies that are profuse, arising from Abortion or other violent Causes, and such as are more moderate: In the first of which it can do nothing, but in the latter may answer to Expectation. But here it behoves us to observe, that if the Weakness of the Parts proceeds from Cachexy and poor Blood, much less is to be expected from the Water, than when it is a Fault of the Part only. For in this Case the *Causa Morbi* is rather encreas'd than taken off, and the State of the Blood is such, as will not bear the Remedy; not to mention the Stomach, which in this and many other Cases, will be too much chill'd by it, either to digest or distribute it: On the contrary, when the Humours are sharp and acrid, and the Body Hectick, its good Effects encrease upon us, so as almost to exclude the Use of other Medicines.

It must be acknowledg'd, that both Dysenterick and Uterine Bleedings may arise from every Cause common to other Hæmorrhagies, at least may be forwarded by them; but this is a Field too large for me to enter upon, who aim only at ascertaining the Use of *Bristol Water*, not at comprehending all possible Cases and their Cures. For what *Quintilian* observes,

erves, is by the change of Persons as applicable to the Physician as the Lawyer. *Si certa aliqua Via tradi in omnes materias ullo modo posset, non tam paucis contigisset: sed cum infinitæ^a Morborum formæ fuerint, futuræque sint, & tot Sæculis nulla reperta sit^b Ægritudo, quæ esset tota alteri similis, sapiat oportet^c Medicus, & vigilet, & inveniat, & judicet, & Consilium à Seipso petat.*

C H A P. IV.

Of Hecticks from encreased Circulation.

WE now proceed to treat of Hecticks from encreased Secretions; which arise either from *Encreased Circulation*, or *Relax'd Glands*. And first of such as proceed from *Encreas'd Circulation*; for tho' Encreas'd Circulation and Encreas'd Secretions do reciprocally beget each other, and the Complication of these two together is what properly constitutes a Hectick or Fever; yet, as it may conduce to the better Explication of my Subject, I shall beg leave to consider them separately.

Encreas'd Circulation may arise either from Stimulus of the Solids or Activity of the Fluids, which mutually produce each other, and are generally so blended together, that it is hard

to say, from which of the two the Hectick properly proceeds. As therefore this cannot exactly be distinguish'd, we shall include under Hecticks from *Heat*, all we have to say of the Activity of the Fluids; and then proceed to Hecticks from *Scurvy* and *inward Ulcers*; under which, I think, I can best explain such as arise from Stimulus of the Solids.

It has already been observed, that a Hectick may be the Consequence of *Heat*, either *primarily*, in that it gradually causes Waste of Flesh and Strength, and robs the Blood of its unactive Parts; or, *secondarily*, in that it is the frequent Source of Inflammation or Hæmorrhage, which end in it. But as the latter of these Cases will be explain'd under a following Head, we shall confine ourselves at present to such Hecticks as arise only from a simple Heat of Blood.

And here, as it would be endless for me to specify the many different Accidents internal and external, which encrease the Heat of the Blood, so, I believe, it will be more to our Purpose to omit the Consideration of the particular Causes of it, as things better known than taught; and enquire into the Manner *how* a Hectick Fever is the Consequence of Heat. That Heat relaxes the Solids, will, I be-

believe, be easily granted me, without further Pains of proving it; as that also the Solids so relax'd will let thro' what they ought to retain, whence the Proportion of *Egesta* will be encreased. But if I can also prove, that Heat robs the Blood of its unactive Parts, there will surely be ample Account made for its giving Rise to a Hectick Fever.

In order to which it will be necessary to shew, what I mean by the *unactive Parts* of the Blood, which have already been frequently mention'd, (p. 31, &c.) and which I shall now endeavour to explain. The necessary Rapidity of the Blood is such, that were not our Bodies wisely defended from the Effects of it, it must destroy that which it was ordain'd to give Life to. But this is prevented, as I conceive, by its *aqueous* and *gelatinous* Parts, which I call the *unactive* Parts, in opposition to those which are more *active* and *volatile*, and which I shall prove to be of the highest Importance.

As it manifestly appears that great Part of our Blood is *Water*, and our very Drink will teach us, how necessary it is to our Subsistence; there is no need of words to prove it. But the *gelatinous* Substance of the Blood seems not to be so well understood, tho' equally necessary, and that in very great Quantities, to
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our Well-being. The Necessity of it is apparent from the abundant Provision made of it almost all our Food, whether animal or vegetable, yielding this *Gluten* in great Plenty, especially our common Bread and Meat; not to mention our Beer, and other Liquids which abound with it. And if we further consider the great Supply made by the Lymphatics, which constantly feed the Blood with a diluted Size, as also by the Saliva, which mixes with all we eat; the Care taken of this Matter seems so great, as if we were not fit to be trusted with so weighty an Affair ourselves, least if it depended altogether on the Quality of what we eat or drank, we might defraud the Blood of its due. And that it is actually in great Quantities ever circulating in the Vessels we may learn from our Senses, in that we observe with our Eyes, how soon the Blood let out of the Body coagulates, as also, if we put our Fingers into it when warm, from the slippery Feel, and Clamminess it will leave on them. And this will still further appear from hence, that if the Blood be kept stirring from the time it is let out 'till it cools, the gelatinous Parts will adhere to the Stick, and leave the more fluid Parts behind, which will never coagulate. This therefore together with

Water,

Water being admitted as Ingredients absolutely necessary to a healthful State of Blood, for what End is this plentiful Provision of them made, but to keep the Body cool and moist, and to counteract the Mischiefs which must otherwise follow from the Blood's necessary Heat and Motion? These then are properly called the *unactive* Parts of the Blood; which, in due Proportion, produce that Temperament in which Health consists; if deficient, leave the Body a Prey to its own Heat, and if they abound, are the Parent of cold Diseases. And when we consider, that neither the *aqueous* or *gelatinous* Parts, will answer the purpose singly, and separate from each other, but that it is necessary they be properly blended and mixed together, before they can serve the Ends of Circulation, then we shall the better conceive how Heat deprives the Body of these Parts. The Means by which they are best mix'd, and kept in proper Fluidity, is Motion; which being deficient, they will separate from each other, and be difficultly secreted, more or less, according to such Deficiency; if increased, (as it always is by Heat) they will be more intimately united together, and pass off the quicker. For as Gluten is not in its own Nature discernible, and cannot well discharge

charge itself without the help of Water, because it cannot pass thro' the small Strainers of the Body, so whatever contributes to mix them thoroughly together, will reduce them into one uniform Fluid, better fitted for Secretion; And the more intimate this Mixture is, the more of this Gluten will continually be carried off. And accordingly, we find that the Blood in hot Constitutions is very thin and watry; not from a Separation made of the aqueous Parts from the gelatinous, as in cold Constitutions; but from a quick Consumption of that which was design'd by Nature to give a Consistence to it. And that this is the Case in Hectick Fevers, will appear from a Consideration of the several Symptoms and Appearances of them.

First then, it is observed that the Blood is exceeding florid and fluid in this Distemper *Hectici rutilantem & difficulter coagulabilem habent Sanguinem*, says *Baglivi*. And ^a Dr *Bennet*, who was a nice Observer of a Consumption, and wrote of it by desire of the College expresses himself in the following Manner *Corporis Succo (in Phthisi scil.) Calore immoderato attenuati, & subtiliores quam par est rediti, ad nutriendum inepti sunt. Primo, Quia*

balsamicâ indigent Consistentiâ. Secundo, Quia concitatori circulantur Motu, ita ut moram nutritioni debitam in partibus non fecerint, exinde deficientiæ necessitatem importantes. Tertio, Quia humidum depascendo, propriâ conteruntur industriâ. And there are other Passages in his *Book*^a which shew, that he was of Opinion, that Heat may thin the Humours so, as even to render the Blood itself transudable thro' the Vessels. --- But this Defect of gelatinous Parts in a Hectick will appear still plainer, if we examine into the several *Symptoms* attending this Disorder.

The first and principal of which is *Loss of Flesh and Strength*, both which do in all probability greatly depend on the due Consistence of the Blood. For, as Water is found by Experiment to transude the Vessels of the human Body; the thinner the Fluids are, the nearer they approach to the Nature of Water, and the more apt they will be to pass off; the Consequence of which is, that the Flesh cannot look plump; nor will the Solids be able to keep up their Tone, because of the Relaxation they now become subject to from the encreas'd Fluidity of the Blood: Accordingly we find, that the more solid our Food is, the greater

^a Pag. 63. Exerc. de Sputo subdulci.

our Strength, agreeable to the Maxim, *Quo fibrosior Sanguis, eo robustior Homo*. And thus the Aliment provided by Nature for *Fætus* and young Animals, whose Vessels are tender and porous, is for the most part of a slimy gelatinous Nature, in order to give Consistence to the Fluids, which, if too thin and watery, would easily run off. And it is worth observing, how very fast young Children will waste, when they once begin so to do; (*viz.*) because their Vessels are more porous, and consequently more apt to let the Fluids (if too thin) thro' them. And how exceedingly the Humours are dispos'd in this Disorder to run off, appears from the *Night-sweats*, another Sympton generally attending a Hætick. These Sweats do not indeed follow them by Day, but the Skin shall be rather squalid and dry; because that which should keep it supple and moist tends then to the inward parts, the Body being not strong enough to throw it forth to the Skin: But as soon as the Warmth of the Bed determines the Humours this Way, then they visibly shew how ready they are to pass off. Other Symptoms of a Hætick are *Encrease of Pulse, Heat after Eating, Heat of the Palms of the Hands and Feet, Flushing of the Checks*, and great *Fluttering and Hurry of the Spirits*, upon the least

east sudden Fright or Motion; all which seem to arise from the too great Mobility and Fluidity of the Blood, and shew the Defect of such Consistence, as is proper to give a Check to both.

But here it will be necessary for me to obviate an Objection arising from a common receiv'd Opinion, that Heat *coagulates* the Blood, which is contrary to what I assert, that it *loosens* it. This Notion is built upon two Experiments; the one *out of* the Body, upon observing that the Serum of the Blood held over the Fire coagulates; the other *in* the Body, that the Blood in many Fevers is exceeding viscid and thick. But neither of these seem to prove the Point, for which they are alledg'd: For as to the first, it arises from the Evaporation of the watry Parts by Heat; the Serum being held in a quiescent State over the Fire; which can never be the Case in the Body, where all is in Motion, and where there can be no such Evaporation. --- But if the watry Parts transude, does not this amount to the same thing, and are not the gelatinous Parts left behind? I answer, No: because, *within* the Body, if Heat and Motion encrease, there is always a more intimate Mixture of the gelatinous and aqueous Parts together; and it is impossible for one to go off single without car-

rying off much of the other with it. And this indeed has been practically allowed, by the Maintainers of this Opinion ; who, not finding Experience answer to Theory, have acknowledged that Heat fuses the Blood, *ordinarily* but that, if it is *excessive*, it will coagulate it which, if it means to express the Effects of violent external Heat on the Fluids and Solids may be true ; but if they only mean such Heat as can be internally produced within the Blood vessels, I cannot believe. As to the other Observation of the Blood being sizy in *Inflammatory* Disorders, I am enclined to believe, that it does not proceed from the Heat of the Fever but rather from the Check given to the Circulation, by the Cause from which it was at first produced ; for as certain as Heat and Motion fluidizes the gelatinous Parts of the Blood so certain it is, that Cold and plethorick Stagnations coagulate it.

The Cure of a simple Hætick from *Heat* (without Inflammation or other Hurt of the Solids,) is so very easy, if taken in Time, that little else is requir'd but Abstinence from every Thing, that may encrease the Heat of the Blood ; common nourishing Diet being of itself sufficient in most Cases to reduce the Blood to its proper Temperament, especially if a
fistec

sifted by Milk and other Incrassants; so that I shall not make a Merit of easy Work, and extol *Bristol* Water, for that which may as well be effected by other Means. For here is not properly a Hectick Fever, but only a Disposition towards it, and that from simple Heat only, not from Stimulus. Nevertheless it must not be defrauded of its just Praise, being exceeding helpful to us, both as it conduces to the more speedy Relieving of slight Cases, and the better Security of such as threaten Danger. And this it does, not only as a *Cooler*, but also as a *Strengthner* of such Parts as are now in danger of Relaxation from the encreased Heat and Fluidity of the Blood. And this is what perhaps is not to be met with in any other cooling Medicines whatsoever, which are apt rather to enervate than strengthen. We may indeed join Astringents and Coolers together, and this may be commendable Practice; but, I believe, it is not in the Power of Art to adapt any Medicine to this Purpose so happily as Nature hath done this to our Hands.

And thus much shall suffice for Hecticks from simple *Heat*. I shall now proceed to such as arise from *Stimulus*, only observing that as Stimulus begets active Blood, so active Blood reciprocally begets Stimulus; and so complicated

cated are these two together, that we cannot always distinguish to which of them the Hectick does primarily belong. The Hecticks more apparently arising from Stimulus are those from *Scurvy*, and from *inward Ulcers*, to which we proceed.

It would exceed both the Intent and Limits of this Treatise, were I to enquire into the several Causes of so complicated a Disorder as the Scurvy is, or attempt to describe the many different Effects it has on different People, according to the Difference of the Cause, Constitution, or Part affected; --- so far as it is productive of a Hectick Fever, I shall endeavour to explain it.

As the Blood must be acknowledg'd to have two Motions, the one *progressive* from the Action of the Vessels, the other *intestine* from the Activity of its component Parts; so there are two Ways, by which the Blood may be the Cause of encreas'd Circulation; *first*, as it abounds with such subtil Particles, as actuate the Fluids, tho' the natural Force of the Solids be not encreas'd; *secondly*, as it is loaded with Salts, or other acrimonious Particles, which may not directly add to the Activity of the Fluids, but will encrease Circulation by stimulating

lating the Solids. The former of these has already been treated of; the latter remains now to be consider'd, as what seems to afford us the best Idea of the Disorder we are now upon.

The *Scurvy* in general is, I believe, agreed to arise, either from *Retention* or *Ingestion* of such Parts as disturb the due Crasis of the Blood. Where both these concur in any great Degree, there arises the true stubborn Scurvy of the *North*, the direful Produce of Moist and Cold: Where only one of them prevail, the Case is very different, tho' the Name is the same, and varies greatly according to the Nature of what is retain'd, or taken in. Though it must be observ'd, that *Retention* is not only the Effect of Climate, but also of Constitution; so that if those, who naturally discharge but little, will eat a great deal, they will bring themselves under the same Circumstances as the Inhabitants of the North. Moreover *Ingestion* may be either in Quantity or Quality such as to hinder Secretion, even in those that do otherwise discharge well; and thus any Constitution may by Intemperance bring on the true Scurvy. But this is not ordinarily the Case in *England*, where it arises principally from Ingestion or Retention singly; nay, if both

both concur, it rarely rises to so high a Degree as abroad. And what a surprizing variety of Cases will arise from these Causes, is hardly to be conceiv'd, much less ought they to be comprehended under the same Name. Writers have indeed divided it into the *hot* and *cold* Scurvy; which, so far as it is built upon a practical Observation, that hot Stimulating Medicines will do Good in the one and Mischief in the other, is by no Means to be neglected. But how very imperfect a Division this is, appears from the very indeterminate Sense of the Word *Scurvy*, and from the great Use made of it to the Vulgar, who take Words for Things. However, as the Disorder we are now upon, is of all hot Scurvys the most eminently so, and will not bear the common antiscorbutick Medicines, it is a Division will suffice for our present Use. This Disorder then, as I conceive, arises principally from an acrid Serum, which, as it pervades *all* Parts, will stimulate *many*, and so disturb the Æquability of the Circulation. This Acrimony of the Blood may cause a Hectick; *first*, as it barely stimulates the Solids, and thereby quickens the Circulation, and encreases the Secretions; *secondly*, as this Stimulus may be the Cause of Inflammation or Hæmorrhage, which end in it; *thirdly*,

birdly, as the Glands are exceeding apt to be fould by such Blood, and thereby become liable to Inflammation, Schirrhus, Scrophula, Cancer, and all their Consequences, which may in other Parts of the Body cause a Hectick, but necessarily do so in the Lungs. But as the two latter of these Cases are to be consider'd elsewhere, I shall here confine my self to the Hectick arising from the first only.

And first it is to be observ'd, that this is a Disorder chiefly incident to Youth, whose Vessels are more permeable, and more sensible of stimulus, than in those of riper Years. It is sometimes Constitutional, but for the most part is acquir'd by hard Drinking, or high Living, or is the Consequence of such Diseases as manifestly leave the Blood full of acrid Particles; such as Small-pox, Measles, and other Fevers. The Cure of it will indeed greatly differ according to its different Effects, but we now consider it only in its first Stage, before the Solids have receiv'd any material Hurt. In which we must have regard both to the Acrimony of the Blood as the Cause, and the Hectick as the Effect. Were we only to strike at the Cause, we should have recourse to such things as temper the Sharpness of the Humours in the Body, and such as evacuate them

out of it : And even here it would be very difficult to determine, what Methods we could depend upon ; because different Acrimonies require different Antidotes, and seek their Exit at different Emunctories. But as we must likewise consider the *Hedtick*, the Difficulty will be still greater ; because the Fever will be apt to encrease the Stimulus faster than we can allay it, and will not bear the necessary Evacuations. If then *Bristol Water* shall be found to reconcile these Contraindications together, it will justly claim a Preference to all other Medicines whatsoever. We can temper Heat and soften Acrimony by such Medicines as are cooling and incrassating, tho' perhaps by none more powerfully than by *Bristol Water*, whose Excellency it is, that it not only stifles it, but expells it at the same Time. Which that we may the better conceive, we must here recollect its astringent Quality, by which it checks the Passage of watry Parts through the Skin, whereby they will be more dispos'd to pass thro' the Kidneys ; because Perspiration and Urine being the two great Secretions of Nature, by which she discharges these watry Parts, the Decrease of one will be the Encrease of the other. And accordingly we find by Experience, that it passes with most People the

Way in large Quantities, and with it undoubtedly carries off many saline and stimulating particles, which would otherwise remain in the body. But here a Question may arise, Why the like is not to be expected from *other* Diureticks? To which I answer, *first*, that in this state of Blood those of the cooling and watry tribe will pass off other Ways, at least will not pass in so great Proportion by Urine as this will; *Secondly*, that the Kidnies will not bear other Diureticks of the contrary Kind so well as this; the Consequence of which is, they will not operate so certainly nor so effectually: For it is a peculiar Property of *Bristol* Water to strengthen the Kidney, as it passes through it; which no other Diuretick proper to this Disorder will do, but rather the contrary. There are indeed Hæcticks which are call'd Scorbutick, and yet do not meet with expected Relief: But whoever considers how nearly allied the Scurvy is to many stubborn humours of the Blood, and how impossible it is to distinguish in many Cases, what is Scurvy or other more inveterate Humour, will not wonder at some Miscarriages. This is certain, that in the most stubborn Cases *Bristol* Water will always be a good Assistant at least, and sometimes cure even beyond Expectation, and

I know not of any Case, in which I can more cordially recommend the Use of this Water, than in Dispositions to a Hectick from a Scorbutick Cause. And when I consider how common this Disorder is among young Gentlemen especially, how fatal are the Consequences of it, and how certain the Cure, if not already far gone, I am mov'd to speak of it in higher Terms, than is decent for me, who will be said to be interested in the Commendation of it. But, as I must ever believe those who labour under this Complaint to be much more interested to hear, than I to speak of it, I shall for their Sakes venture to assure them, that there is not in the whole *Materia medica* any Thing so well adapted to their Case as this is, whether contracted from intense Study and sedentary Life, from Free-living, or from unhappy Constitution; and that they will probably meet with Nothing elsewhere, that will cure them so agreeably or so effectually as *Bristol Water*.

Let us now proceed to the Hectick occasion'd by *Ulcer*. There are two Ways by which an Ulcer may cause a Hectick; *First*, by the Discharge of Matter which it yields; *Secondly*, by the Stimulus which it gives: The one for the most Part the Case of large outward Ulcer

Ulcers, the other the Effect of inward ones. The Manner how a Hæctick is the Consequence of inward Ulcers has already been explain'd; how it proceeds from outward ones, appears plainly from the Drain made, and is properly reducible to Hæctick from encreas'd Secretions: but I here choose to consider both together.

What then are the Indications of Cure? and this is what I would gladly settle, but then I must explain the Nature and Difference of Ulcers in general, from the Cause occasioning them, from the Part affected, and other Considerations too complicated for me to enter upon, and much of it such as would be foreign to my Purpose. I shall therefore content myself with enquiring in general what may be expected from *Bristol Water*, when a Hæctick is the Consequence of them. First then, in large Discharges where it proceeds from the Drain made, it keeps the Body from wasting, and gives better Room for Restoratives; in such Ulcers as stimulate, it gives a Check to the Encrease of Circulation, it prevents further Inflammations, and in some Measure mitigates the Effects of those already begun; nay further by softening the Acrimony of the Blood it may possibly dispose them to heal. But as this is seldom or never the Case, and inward Ulcers
are

are not ordinarily to be cur'd by *Bristol Water*, they must be acknowledg'd in general to be above the Power of it. The bad Effects of Ulcers are indeed greatly mitigated by it, but I cannot easily believe it heals them; much less do I think, that it has any cleansing Quality, whereby it washes away the Foulness of such Ulcers, and acts on them in the same Manner as on outward Sores. In Ulcers of the Lungs and Kidnies it is greatly recommended, but I forbear speaking of its Merit in these Particulars at present, and only observe in general, that I do not believe Ulcers of either of these Parts to be so common as is generally imagined; which will appear more plain when I come to treat of a *Phthisis Pulmonaria*. And thus I have gone thro' all the Species of Hectick from *increased Secretions*, so far as they arise from *increased Circulation*. I now proceed to *increased Secretions* from *relax'd Glands*, and first of a *Diabetes*.

C H A P. V.

Of the Diabetes.

AS there is no Sort of Hectick so remarkably benefited by *Bristol Water*, as the *Diabetes*, we shall be the more particular in

our

our Enquiries into the Cause of it; in order to find out, if possible, what peculiar Quality it is in this Water, which makes it so effectual. I have before observ'd, that all Hecticks are caused by some *Drain*, and that the general Indication of Cure is the Stoppage of such Drain, which is effected by taking away the Causes of it. And this is so manifestly true of a Diabetes, that it never was disputed; the only Difficulty therefore is to find out the Cause of this immoderate Flux of Urine, and settle our Indications accordingly. In which Enquiry, the principal Point in Dispute will be, whether this Distemper proceeds from a Fault in the *Blood*, or a Fault in the *Kidney*?

Dr *Willis* is the first Writer, that I know of, who is an Advocate for the former; who supposes, that the Blood being fused, or turn'd like Milk into Curds and Whey, the watry Part seeks its Exit thro' the Kidneys, and so causes Diabetes. And hence it is, says He, that Rhenish Wine, Cyder, and such like acid Liquors cause this Distemper; (*viz.*) by curdling the Blood. The Weakness of the Part may possibly, He thinks, contribute something to the Disease, but He is apprehensive, if this was considerable, Blood rather than Water must pass this Way; and therefore directs his Cure

entirely to the amending the Crasis of the Blood, asserting that Astringents are contrary both to Reason and Experience; and by no Means to be depended on. In answer to which I beg leave to observe; *first*, that our Author has given no one Proof, that such Separation of the Blood is possible, whilst circulating in the Vessels; *secondly*, that if so slight Acids caused such Separation, would not this Disorder be more frequent? or could we in any Case safely use the stronger Acids? *thirdly*, supposing the Blood thus separated, He assigns no Reason, why the watry Part should run thro' the Kidneys only, and not thro' other Emunctories; --- Is it not more agreeable to Experience, to believe it might pass off at the Skin, or if Nature could not effect this, that it would lodge in the Abdomen, swell the Legs, and tend to a Dropsy? --- *fourthly*, it does not appear that Acids are the principal Cause of this Distemper; nay once, I think, I saw it brought upon a Patient by the frequent and continued Use of *Sal Absynth.* a Salt which He proposes for the preventing this Curdling of the Blood. I need not take any further Pains to confute one whose Philosophy is now out of Vogue, and whose great Abilities claim no better Character in this Age of Certainty and

Demonstration, than that he was *Egregius Hypothesium Artifex*.

Let us then turn to such as establish Physics upon better Promises, and build upon the known Laws of Motion and Mechanicks. A renowned Writer of this Class, has the following Words in support of a Diabetes being a Disease of the Blood. ^a "The evident Cause of this Distemper is an habitual Drinking of strong Liquors; and the more spirituous they are, the sooner and more violently they bring it. --- Hence it comes to pass in Process of Time, that the Serum, or thin Parts of the Blood, contains a large Proportion of a spirituous Fluid, or that Part of the Serum which should be Water, is for the most Part Spirit. Now the Salts of the Urine or Blood will not dissolve in a vinous Spirit, that is, the Particles of which the Salts consist are more strongly attracted by one another, than they are by such a Fluid, as by Experiment appears; and therefore the Quantity of Salts in the Blood will be daily encreas'd, and circulating thro' the capillary Vessels must irritate the fine Fibres, and cause little Pains and Twitchings all over the Body, (which he before says are Symptoms preceding a Diabetes.)

^a Dr James Keill of Animal Secretion, p. 70.

“ But when the Serum is full of these Salts, the
 “ Distance between them and the Globules of
 “ Blood will be less, and consequently they will
 “ attract the Globules of the Blood more strongly
 “ ly than the Globules attract one another
 “ and the Globules or red Part of the Blood
 “ will be dissolv’d and diffused thro’ the Serum
 “ of the Blood. And this again is confirmed
 “ by Experiments, for nothing does render the
 “ red Part of the Blood so fluid, and keep it
 “ more from coagulating when drawn in a Cup
 “ than urinous Salts and Spirits. When the
 “ red Part of the Blood is thus dissolv’d, and
 “ united to its Serum, it will with the Serum
 “ be carried off thro’ the Glands of the Kid-
 “ nies, and being united to their Salts, will alter
 “ ter their Figures and Properties, as Litharge
 “ and Corall do the Salts of Vinegar, giving
 “ them a sweet Taste. Thus from this one
 simple *undoubted* Principle of Attraction, and
 three known Experiments, the whole Mystery
 is explained.

But it is to be observed in the first Place,
 that it by no Means appears, that drinking of
spirituous Liquors is the most general and evi-
 dent Cause of this Distemper; much less that
 the more spirituous they are, the sooner they
 bring it: For it has not only been before ob-
 served

erved, that acid Liquors, such as Cyder and small Wines, are a common Cause of it; but it also appears from daily Experience, that small-beer, Water itself, or any other watery liquor, taken in too great Quantities, may be the Cause of this Disorder. This may indeed be more likely to happen, if the Digestion is impaired by frequent Dram-drinking; but Drams alone are rather productive of other Distempers; else surely the Diabetes would be more frequent; so that no certain Effect is to be gather'd from the Blood thus impregnated with Spirit, as our Author supposes. *Secondly*, if it were possible that spirituous Liquors could saturate the Blood with Spirit, as not to leave aqueous Moisture sufficient to take up its salts; but that Part of the Serum which should be Water, becomes for the most Part Spirit, could we not hence apprehend worse Consequences? How could the Blood circulate without aqueous Moisture? How could the necessary Secretions be carried on? How would the tender Fibres perform their respective Offices? How would the Brain bear it? Does not every Drunkard shew us, that Spirit is of a transmutable Nature, and easily carried off? Are the wandering Pains and Twitchings of the tendons the only Mischief that would ensue?

Or indeed are they usually reckoned among the fore-running Signs of a Diabetes? But, *thirdly*, supposing there is Spirit enough in the Blood to hinder the Salts from dissolving, and the Experiment shall take Place, could we not easily supply the Body with aqueous Moisture, sufficient to overbalance the ill Effects of the Spirit, and would not the Cure consist in that which by Experience is found hurtful, (*viz.*) the plentiful Drinking of small watry Liquors?

But to proceed to his second Experiment, which is the *Fusing of the red Part of the Blood, by Means of urinous Salts*, which makes the Blood become thin as Water, and transmeable thro' the Kidnies. Did this Gentleman ever see Blood turned to Water, by Means of urinous Salts? And if it was so, what determines the Passage of it thro' the Kidnies only? Not the Salt; for that has alter'd its Qualities, and become sweet; and He brings a third Experiment to prove why it must be so, (*viz.*) because a red Substance out of the Body makes an acid Salt sweet, therefore a red Substance in the Body shall make an urinous Salt sweet. I need not surely dwell any longer on such Reasoning as this, but shall only observe, that this Gentleman was a Physician of great Note in the Mathematical Way, and profess'd to build

ould Physick on the clear and demonstrable Principles of that Science,

Sed dextræ erranti Deus abfuit ---

But tho' I am by no Means satisfied with any Account hitherto given of this Matter, yet the great Alteration made in the *Urine*, seems very much to favour the Opinion of a Fault in the Fluids; for if the Kidnies only were in Fault, why should diabetical *Urine* differ so much from that which is natural, not only in *Quantity*, but in *Quality* also? But notwithstanding this Difficulty, if our Opinions are to be guided by Probability, I am rather inclined to think the Kidnies the Seat of this Disorder, and that on the following Considerations; *First*, from the most evident Causes of it; *Secondly*, from the Analogy it bears to other Accidents of the Body; *Thirdly*, from the Cure.

The most common and evident *Cause* of a Diabetes is the immoderate Use of such Things as cause *Urine* to flow plentifully thro' the Kidnies; thus Cyder, Cool Tankards, Punch, which provoke *Urine*, and are drank in great Quantities, are often productive of this Disorder; and that more especially, if the Constitution is such, as to have its Discharges this Way naturally large, --- if drank at a Time of Year,

Year, when Perspiration is less, --- at a Time of Life, when the Tone of the Part begins to be impair'd, or when the Kidnies are already weaken'd, thro' Intemperance, Disease, or other Accident. These Considerations, I say, do incline one to think, that a Weakness of the Secretory Ducts of the Kidnies is the *Causa proxima* of this Disorder. And this is somewhat confirm'd in that ^a most Authors speak of it, as arising from an undue Use of diuretick and forcing Medicines. ^b Some have observ'd it consequent on a Suppression of Urine, ^c as also on the undue Use of Opium; of both which a Relaxation is the Consequence. And there seems still farther Reason to believe this, if we consider, *secondly*, the *Analogy* it bears with other colliquative Discharges, which we all agree proceed principally from the Relaxation and Weakness of the fecerning Vessels, and which are accompanied more or less with the same Hectical Symptoms; and perhaps could we examine into these Discharges, we should find them differ greatly in Quality as well as Quantity from what they naturally should be: which might serve in some Mea-

^a *Hildanus* Cent. 5. Obs. 53. *Tulpius* Lib. 2. cap. 46.

^b *Forestus* Lib. 24. Obs. 4. *Harris* Observ. 3. de Diabete.

^c *Lister* Exerc. de Diabete.

re to reconcile us to the strange Alteration of the Urine from a Diabetes. *Thirdly*, the Cure of this Disorder has from all Antiquity consisted chiefly in such Things, as were supposed to astringe and strengthen the Kidneys, without any Regard to the Crasis of the Blood, except that by Milk and other nutritive Incrasments, they endeavour'd to lower the Heat, and by some cooling Medicines allay thirst. But their chief Dependance was on astringents; which any one may be convinc'd that consults Authors. But to this it may be urged, that the Diabetes of the *Ancients* was not, in the Opinion of some People^a, the same as it is now: nor, if it was, does it appear that they cured it. Which Objection might be of some Weight, did not the present Practice also depend upon Alum, Bark and Nitriol, as its Capital Medicines. And indeed the great Efficacy of *Bristol Water* in this Distemper seems best explained upon this Supposition, which we all allow to have an astringent

^a *Lifter* makes use of two very good Arguments to prove that the *Ancients* knew little of this Distemper; *first*, that all of them except *Aretæus*, speak of Liquor passing thro' the Kidney of the same Colour it was taken in, which is manifestly false; *secondly*, that none of them mention the sweet Taste of the Urine; so that whether the Diabetes is not now what it was then, or they did not know it.

gent Quality, and to be a Strengtheners of the Kidneys and urinary Passages.

But here it may be objected, that if *Bristol Water* cures, where the more powerful Astringents fail, it seems as if the Cure was not effected by *astringing*, but by some *other* Quality. To which it may be replied, that in outward Applications, the milder Astringents will often be of Service, where the rougher would do Hurt; so that the most powerful are not always the most effectual, unless adapted to the Part affected. And besides this, there seem two Things peculiarly requisite in every Medicine, which is to be of Service in this Disorder; *First*, that it has an *astringent* Quality; *Secondly*, that it arrives at the *Kidnies*. Now as there are very few Astringents that will do this, or can by Art be determined this Way, we must make choice of such as will act upon the Part, and prefer them to stronger Medicines. And in this I take the peculiar Excellence of *Bristol Water* to consist; which, tho' a *slight Astringent*, yet as it seeks its Exit through the Kidnies, acts more effectually upon the Part, than any other known Astringent, and has this particular Advantage, that it not only strikes at the Cause of a Diabetes, but also allays the Hectical Heat, which is the Effect of it.

And

And these are the Notions which I have hitherto entertain'd of this Distemper, and the Cure of it; But I must own, I am not a little staggered in my Opinion, from what I am inform'd by Persons of the greatest Experience, viz.) that the *Carbuncle* is sometimes attended with a Diabetes; --- That it has been observ'd to follow upon *Mortifications* from an inward cause; --- That different Kinds of *Fevers* will be in it; --- That poor watry *Blood* may cause the Diabetes having been seen complicated with *anasarcous* Swellings. Which Observations seem to leave us very much in doubt, whether this Disorder may not sometimes proceed from a Fault in the *Blood*, and not in the *Kidney*; and sometimes from *other* unknown causes. To which I shall only beg leave to observe, that as they do not absolutely contradict, so they may possibly be reconciled to, the theory laid down. For as to *Mortifications* and *Carbuncle*, the Resolution of the whole game is such, that a Relaxation of the *Kidneys* is by no means improbable; --- and as to *Fevers*, we have already explained how they are productive of Hectick, and Encreased Secretions. --- Watry Blood I am sure will be more apt to lodge in other Parts, because Experience teaches it; and it is most Times very

difficult to draw it off this Way by the Force of the strongest Diureticks. But nothing surely hinders it passing by the Kidnies, if they are weak, and fitted to receive Humours. So that though watry Blood was admitted as a *Causa remota*, yet the *Causa proxima* might still be in the Kidnies; which must either be made weak or found so, before a Diabetes will follow as the Effect.

But enough of this Dispute; Dr *Mead* having very lately favour'd the Publick with his Opinion of these Matters; which, if not immediately decisive, must certainly carry great Authority with it, and excite our farther Enquiries. ^a“ The Diabetes, says he, is not, as Physicians have commonly judged, a Distemper of the *Kidneys*, but of the *Liver*, proceeding likewise from a vitiated Mixture of the Bile. “ It happens most frequently to those, who “ without due Exercise indulge themselves in “ drinking vinous Liquors, and then quench “ their Thirst arising from these by too great “ a Quantity of such as are cooling.

“ By such ill timed heating and cooling of “ the Humors of the Body, the natural Proportion of Salt in the Bile, by which its oily “ Part is incorporated with the Water, is not

^a Dr *Mead* on Poisons p. 32. of the new Edit.

sufficient, now the Water overabounds, to preserve the Mixture: so that a great Portion of this, together with some of the thinnest of the Oil, will be discharged by the Kidneys; and the urinary Ducts will be greatly enlarged by a constant Afflux that Way. By which Means the thicker oily Particles are left in a Degree of Coagulation in the smaller Tubes of the Liver, and are there formed into a hard fatty Substance.

“The Dissection of those who have died of the Diabetes proves this to be so: For I have always found a *Steatomatous* Collection in their Liver, in Appearance not unlike to what is often discharged by Stools in a confirmed Jaundice, but of a harder Consistence.

“As to the Sweetness of the Urine, this is all bilious; for the Water of the Bile separated from its Salt is sweet. *Ox-Gall*, by a Chemical Distillation, yields 4 Parts in 5 of Water. This I have observ’d to be fragrant, as if perfumed with Musk. The Urine in the Beginning of a Jaundice very often smells like Violets; and in a Diabetes the Flux is usually lessen’d towards the latter End of Life, and the Water is as bitter as Gall: plain Indications of a like Origin of two Distempers seemingly very different. Neither

“ can I omit to take Notice, that the Cure of
 “ a Diabetes confirms these Remarks. For this
 “ is chiefly done by supplying the Blood with
 “ a Quantity of fixt Salt, particularly such as
 “ is contained in Lime-Water, and in that of
 “ the Hot-Well at *Bristol*, which is indeed a
 “ natural Lime-Water.”

And in Confirmation of this Doctrine, it must be owned that we sometimes observe a Jaundice to be complicated with a Diabetes, --- that even when it is not so, the Urine will be sometimes not sweet but bitter, --- that Persons labouring under this Distemper, tho’ not icterical, will sometimes have their Liver manifestly to the Eye and Touch large and hard. And yet nevertheless, as one cannot help objecting to that which is new, I hope, I may be excused in proposing the following Queries, not made with a Design to invalidate the Doctor’s Opinion, but rather to have this Point better established. *First* then, tho’ it cannot be denied that the *Liver* is *often* affected, yet as it is not *always* so, may it not be suspected to be a *Consequence* rather than a *Cause* of the Diabetes? and may not the immoderate Discharge by the Kidnies greatly disturb, and alter the Secretion of Bile, in some more, in some less? *Secondly*, The Argument brought
 from

from the sweet Smell of Water distilled from Ox-Gall, and of Urine in the Beginning of some Jaundices, does not determine this Matter, because the *Smell* and the *Taste* are two very different Things, and what is sweet to the one may not be so to the other. I should therefore be glad to know, whether this *Distill'd Water* is sweet to the *Taste* as *Diabetical Water* is? and whether it resembles it in any other Respect? How far *Bristol Water* may be compared to Lime-Water shall be particularly consider'd under my third general Head. These are some Objections that occur to me; and I am the rather encourag'd not to think the Kidnies are altogether to be rejected as the Seat of this Disorder, because the Doctor owns, that the urinary Ducts must be greatly enlarg'd (or relax'd) by a constant Flux that Way.

This is certain, that so long as it is not agreed what is the proper Indication of Cure, it is impossible to determine how *Bristol Water* acts; and it can only be recommended in general as an acknowledg'd Specifick, which does more in this Distemper than any known Medicine, and interferes not with any.

I shall therefore only observe one Quality of it which is very peculiar, that the continual
Thirst

Thirst complained of in this Disorder is generally taken off by it, when no other Liquor whatsoever will do it, which, if we believe ^a *Aretæus*, is no small Point gained; especially if we consider, that all other small watry Liquors, fit for this Purpose, are apt to do more harm than good, and cannot well be allowed.

C H A P. VI.

Of Gleets.

WHat next offers to be consider'd under the Head of encreased Secretions from relax'd Glands, are *Gleets*. And first of the *Fluor Muliebris*, than which perhaps there is not a more complicated Disease, whether it be considered in its Causes, or in its Effects. The *first*, and most general, *Cause* of it is the Abundance of phlegmatick or watry Humours apt more especially to lodge in Parts remote from the Heart, where the Circulation is languid, and the Vessels numerous and lax, and which so lodging discharge themselves in different Consistence and Colour, and cause no

a Ἐς δὲ τὸ Δίψος μεγάλης ἰατρικῆς χρείας· τὸ δὲ γὰρ ἐν τῷ Εἶδός, ἀλγίων πάντων μείζον, καὶ ἢ πίνωσι τὸ ὕρδον Πρόκλησις ἐρήσιθι. --- *Ad sitim vero extinguendam magno Medici Artificio opus est; siquidem in ejusmodi Malo hoc cætera Tormenta longe superat; atqui si humorem biberint Urina citatur.* Lib. 2. cap. 2. De curat. Diabetis.

small

small Variety of Cases. *Secondly*, if from any Foulness of Blood, or Sharpness of Humours, or other Cause, the Glands of these Parts happen to be inflamed, the Consequence of such Inflammation is, that when it goes off, it necessarily leaves such Glands weak and loaded; which if they do not soon recover their Tone, become gleety, and will also produce different Effects, according to the Constitution it meets with, and end either in Cachexy or Hectick. *Thirdly*, the same Consequences will follow, if these Parts are weakened from any other Cause, such as natural Weakness of the Part, any Hurt from Cold, or Strain, or other Accidents, which are innumerable. And accordingly we find that the *Cure* of this Disorder varies with the *Causes*; For in the *first* of these Cases, it is expedient to prescribe Vomits, Purges, Stomachicks, Chalybeates, Bitters, Volatiles, warm Emmenagogues, &c. in such Order and Proportion as the Case requires: In the *second* Case we dare use nothing which agitates the Blood or stimulates the Solids; but must have recourse to Incrassants, and to softening sedative Medicines: In the *third* and last Place, our whole Care is to strengthen the Part by Balsams, and warm Chalybeates, if the Constitution be moist and cold; by Alum, Bark,

Bark, Vitriol, &c. if the Humours be sharp; and by relieving the Part affected by every Method that can derive Humours from within outwards.

Let us now see what is to be expected from *Bristol Water* in these several Cases before distinguished. In the *first* Case, where the Blood is poor, and the Part loaded, I conceive it to be of no Service at all; For how should such a Habit of Body be improv'd by a Water, which rather binds *in* Humours than throws them *out*? and how should it strengthen a Part, of which it naturally encreases the Load? But in the *second* Case, I believe it may be of great Benefit; *first*, as it tem- pers the Sharpness of the Humours, and makes them less stimulating; *secondly*, as it strengthens the Part, preventing Inflammation, and remedying the Effects of it. But even here there will be great Difference of Success in Proportion as the Constitution is hot or cold; and according as the Disposition tends to a Hectick or Cachexy: Which latter is the most common Consequence; because Women are not so subject to a Hectick as Men, having neither so active Blood, nor so active Solids, as Men in general have. But it is to be observ'd here, that Cases are frequently complicated,

--- that

- that the Body will seem cachectick, when the Humours offending are exceeding sharp. And in such-like Appearances *Bristol* Water must not be despised; because it may in Conjunction with other Medicines be of great service; and that, not because of sharp Humours *only*; but if we consider that Weakness of the Part is a necessary *Concomitant*, so far as *Bristol* Water can help this Symptom, so far it may be used, and no further. And this brings me to consider of the *third* Difference laid down, where the Weakness of the Part is chiefly in Fault. And here *Bristol* Water may be consider'd as a Strengthenner of the Part, but not such as can be trusted to in great Hurts, such as Abortions, Strains, &c. Where the Blood is warm and active, it does great Good; but where it is cold and languid, it cannot be relied upon.

What has been said is, I think, sufficient to explain the Disorders of the *Glands* in general, at least such as end in Drain. *First* then, they are either loaded by Quantity, or, *Secondly*, they are inflamed or obstructed by some ill Quality of the Humours passing, which, if resolved, necessarily leave the Part weak; if not, end in Schirrhous, Ulcer, &c. *Thirdly*, they, like all other Parts of the Body, are subject

to Weakness either constitutional, or acquired. Each of these three therefore will either end in Drain, or somewhat worse. The first is the most easily remedied; next to that, the second, if it ends safely in Drain; last of all the third. And if we consider that any two or more of these, may be complicated together, we shall then have some tolerable Idea of the great Variety of these Disorders, and why they are often of so stubborn a Nature.

Simple Gonorrhœa's in Men stand distinguished from those in Women, in that they proceed only from Weakness of the Part, and are never occasioned by *Humours* pressing that Way, but by *Strain* or other acquir'd Weakness of the Glands. Whence the sole Indication of Cure (unless in ill Habits of the Body which make the Cure complicate,) is strengthening the Part; which as it is no easy Matter to do, so I cannot recommend *Bristol Water* as a Thing to be depended on. But when such Cases prove stubborn, and cannot be cured by the common Methods; I know not of any Thing more adviseable to add to other Medicines than *Bristol Water*. It may better a scorbutick Habit of Body; it will *most certainly* contribute to strengthen the Part; and by its gentle gradual Manner of Operation, may *perhaps*

aps act more friendly and effectually, than that which seems more powerful. And accordingly we observe in these Cases, that even regular Diet, gentle Riding, chearful Company, which all serve to keep up the Strength, are sometimes more to be relied on, than the most promising Medicines.

In *Venereal Gonorrhæa's*, where the Virulence entirely purged off, and a Gleet left, it generally yields to Turpentine Medicines; if it continues, or is encreased by repeated Acts of Venery, (without Infection) it is reducible to simple Gleet, and *Bristol Water* will be of equal Service.

And thus much shall suffice to have said on these two great Sources of a Hectick, *Encreased Circulation*, and *Encreased Secretion*. Were I to treat particularly of *Diarrhæa's*, profuse Sweats, and other colliquative Discharge, could do little more than repeat what has already been said. I shall therefore only observe in general, that where the Drain is great, and the Hectick certain, this Waters answers two main Indications of Cure, of resisting the Activity of the Blood, and strengthening the weak part; except that in *Diarrhæa's* some of the same Objections will lie against it, as I have before observ'd in the Case of Dysentery. But

when the Evacuation is such as the Body can bear, and the Constitution not hectical, it can only act as a Strengtheners. Nor will it even do this, where there is the least Tendency to Cachexy. The one appears from its Virtues in a Diabetes; what is said of Gleets, may serve as an Instance of the other. What now remains, is to explain its Virtues in Disorders of the *urinary Passages*, and in the *Phthisis Pulmonaria*: And first of the urinary Passages.

C H A P. VII.

Of Disorders of the Urinary Passages.

FROM the early Reputation *Bristol Water* acquir'd for the *Stone* and *Gravel*, one would imagine its Uses in this Distemper were already settled. But I shall nevertheless propose my Opinion, wishing Others had been as free in declaring theirs.

In *fixed Stones* (where it passes, as it very often will) I believe it is of singular Service in that it softens the Urine, allays the Heat and Fretting of the Parts, and may serve to wash away any little fresh Concretions of fabulous Matter. But in those that are *passable* it will not only take off Inflammation, and cleanse the Passages, but also strengthen the

Part

Part, and guard against a Return of the Disorder. There is a most material Distinction to be made, between giving it *in* the Fit, and *out of* the Fit: In the former, it is very often not of Force sufficient to make its Way; and when this is the Case, I conceive it will do more Hurt than Good, by chilling the Bowels, and encreasing Spasms. But in the Intervals Nothing of this Kind is to be fear'd, provided the Constitution be not too cold; and it may generally be relied on both as a Preservative and a Cure. It may perhaps by some be excepted against as an Astringent. But, as it is agreeable to Experience to believe, that the Weakness of the Parts is one great Foundation of this Misfortune, and that laxative and opening Medicines may be pushed too far, and lay a Foundation for further Mischief, by relaxing the Passages, which we should now endeavour to strengthen, the Objection will be of no great Force. Accordingly *Fred. Hoffman* observes: *Quod Toni Renalis nimia Resolutio morborum, qui Renes occupant, potissima Causa & Origo est.* --- *Quâ de causâ*, says he, *temperata astringentia & roborantia in Calculo tam præservando, quam curando, palman cæteris præripiunt*, and refers you to a Dissertation of *Heucherus de astringentium usu in Calculo.*

Part. 1. Sect. 2. cap. 8. of his Medic. rationalis Systematicæ. And of all Astringents surely *Bristol Water* promises the fairest, because it is a Diuretick at the same Time, and serves to cleanse as well as strengthen, which no other Astringent, I believe, does. In scorbutick Habits of Body, where the Water is foul, and the Kidnies liable to Inflammation, it is the most certain Preventive I know of; and as it prevents Inflammation, so likewise it is serviceable in all Ulcers, and other Complaints of these Parts, which are attended with it. Some indeed have thought it to act upon Ulcers, as a Dryer and a Healer; but I must own I cannot think so, nor do I believe Ulcers of these Parts so frequent, as is generally imagined. For from what I have observ'd in several Cases sent down here, I am very much of Opinion, that the *Glands* of the *Bladder*, and *Ureters*, and perhaps *Kidnies*, are subject to Gleets, as well as those of the *Urethra*; and that the Discharge *they* sometimes give resembling *Pus* is often thought to proceed from Ulcer.

To conclude then. Wherever the Indications of Cooling, or Strengthening, or both, take Place in the urinary Passages, there will *Bristol Water* be of Service, and perhaps there

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no Part of the Body on which it acts more powerfully, than on these Parts.

C H A P. VIII.

Of the Phthisis Pulmonaria.

OF all the Disorders which seek Relief from *Bristol Water*, there is none more common than the *Phthisis Pulmonaria*; none, in which more is expected from it; none, in which the Hopes of our Patients are oftner received. Some come not 'till 'tis too late to help them; Others with Symptoms the *Water* will not reach; All expecting Miracles, not considering the great Variety of Cases comprehended under this one Name, or that what might have been of Service in the Beginning, becomes of little or no Efficacy in the latter Stages.

It therefore behoves us to enquire into the several Causes of this Disorder. In order to which I shall consider the *Phthisis Pulmonaria* as it arises from the three following Sources: *First*, from Inflammation. *Secondly*, from Hæmorrhage. *Thirdly*, from Catarrh. The two first of these have been so universally receiv'd, and consider'd by most Writers as Causes, that they have almost quite excluded the latter.

Ulcus

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Ulcus Pulmonum being so generally acknowledged as the Root of this Disorder, that it is become a synonymous Term for it; whereas, if we examine more closely into this Affair, it may perhaps appear that the most common Cause of it is a *Catarrh*.

By *Catarrh* I understand all Defluxions of any Kind, which fall upon the Glands of the Lungs, be they either simple or compound, (i. e.) whether they offend in *Quantity* only overloading them, or *Quality* also inflaming and obstructing them. The Consequence of a simple *Catarrh*, *without* Inflammation, is a greater Discharge than is natural; which, if continued, becomes a Hectical Drain: If *with* Inflammation, it must be either resolved, or not resolved; if the former, it leaves the Gland weak, and more or less disposed for the Reception and Lodgement of Humours, according to the different Nature and Degree of such Inflammation; if the latter, it tends to Ulcer, or degenerates into Schirrhus, Scrophula, or other inveterate Obstruction; all which end in Hectick, tho' no Ulcer ensues. *First*, as they cause a Drain in other of the neighbouring Glands now overloaded; because these are obstructed. *Secondly*, as they cause Inflammation and Hæmorrhage; for the
tender

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tender Vessels of the Lungs being, by the Defect of such Glands, either depriv'd of their proper Moisture, or supplied with such as is improper, will be very apt to bleed, or inflame of themselves; and much more so, if we consider the continual Strain they will be under from frequent and vehement Coughing. And, I believe this to be no uncommon Case, (*viz.*) that the Lungs shall be inflamed and ulcerated, not from any Fault or Foulness of Blood in general, but from Defect of necessary Moisture from the Glands: Hence we observe symptomatick Inflammations and Hæmoptyses to be very common in this Disorder, not as a Cause of *Phthisis*, (as is generally imagined) but as a Consequence. *Thirdly*, these Obstructions will end in Hectick, as they often end in Ulcers; Or, if they do not, are equally stimulating, and may be equally productive of Hectick Heat. And it is reasonable to think, that from one or other of these Accidents attending a *Catarrh*, a *Phthisis* is for the most part occasioned.

For *first*, if we observe upon every slight Cold taken, or Check given to Perspiration, how very apt the Humours are to fall on these Glands, how often, and how easily they are affected, we must allow them to be very sub-

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ject to Catarrh, and that perhaps more than any other Glands of the Body. Now if the Crasis of the Blood be good, and this is only a simple Catarrh, there is a Discharge made of it by Cough, and Spitting, and the Patient soon recovers himself: But if these Glands are naturally weak, and not able to bear the Load, they will be so weakened by it, as to endanger a Drain. If the Crasis of the Blood be not good, then, if this Accident happens, there will be still further likelihood of Michief; because the Glands will not only be overcharg'd, but they will also suffer from Stimulation, Obstruction, or Inflammation, more or less, according to the Nature of the Humours prevailing; which Inflammation, if resolved, will necessarily leave the Part weak and gleety; if not resolved, will have worse Consequences, as has been before explain'd. Hence we see, *first*, why Winter-Cold and moist Air, Anxieties of the Mind, Night-Studies, and every Thing that checks Perspiration, are the Forerunners of this Disorder; because they naturally throw Humours upon the Part, --- why any natural Weakness of the Lungs, from Constitution or Mal-Formation, make the Case more dangerous, --- and lastly, why these Accidents are so fatal to scorbutick Habits of Body, such as are not per-

perfectly cleansed of the Remains of the Small-pox, Measles, or other eruptive Fevers, or such as have any Acrimony of Blood of other Kind; because all these contribute to the greater Obstruction and Hurt of the Glands. And do we not in general observe, that the Beginning of a *Phthisis* is generally from a Cold caught, without any previous Inflammation or Fever, at least such as might be expected from an Inflammation tending to Suppuration? Does it not for the most part begin with a Cough and spitting, neither in Quantity nor Quality such, as could flow from an Ulcer; or do we observe any Difficulty of Breathing proportionate to the supposed Cause?

There are indeed some Appearances which give Countenance to the receiv'd Opinion: for as this Disorder often begins with some slight Symptoms of Inflammation, a Pain in the Chest, and dry Cough, which changes into a moist one, the Patient spitting foul, and growing Hectical; these Symptoms have been thought to arise from Inflammation ending in Ulcer. But here we must distinguish between an Inflammation of the *Blood Vessels*, and an Inflammation of the *Glands*; In the former of these, if the Inflammation is resolved, there is no material Hurt remains; but in the latter, tho'

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tho' it be resolved, there will remain a Gleet, which is the Thing which here deceives us. As therefore small Inflammations generally are resolved in other Parts of the Body, why may we not suppose them to be so in the Lungs? especially as we see even great ones, such as *Pleurisies* and *Peripneumonies*, if taken in Time, generally to resolve; and if so, the more natural Way of accounting for these Appearances is a *Catarrh*, the constant Effect of swoln inflamed Glands: Whereas *Ulcer* is not the constant Effect of Inflammation, and could not well happen so often as it is thought to do in these Cases, however apt the Lungs have been supposed to suppurate. Another Reason which may have favoured the Opinion of *Ulcer* being the only Cause of a *Phthisis* is, that it often happens that Streaks of Blood are seen in the Spittle; whence it has been concluded that this proceeds from the Rawness of the Ulcer, as it often happens in external Sores: But it may surely full as well be accounted for, from the Want of due Moisture to supple and lubricate the Parts, whereby they will be subject to this Accident, and not able to bear the vehement Agitation of Coughing without Hurt: So that it is very probable, that a *Phthisis* generally proceeds from diseased Glands

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and that even *Ulcers* themselves may proceed from this Cause; *First*, as the Glands themselves may be ulcerated; *Secondly*, as they may cause Ulcerations of the neighbouring Parts, by not supplying them with their wonted Moisture, and that one or other of these is most commonly the Cause.

But as it is highly material that this Matter be rightly understood, I will endeavour to exemplify the Truth of what is here laid down from some of the most common and efficacious Methods of Cure. *Derivative* Medicines and Methods in general may indeed seem equally calculated both for Ulcer and Catarrh: But what shall we think of that Capital Remedy, *Riding*, so greatly recommended by *Sydenham*, and so universally approv'd? Can frequent Motion, and continual Admission of fresh Air, contribute to the Cure of an Ulcer? How do we account for the great Benefit arising from *Change of Air* and Climate? Can the Warmth or Freshness of the Air stop the Spreading of the Ulcer? would it not rather be apt to inflame and make Matters worse? This is certain, no Account can be given of the good Effect of either of these Methods so satisfactory, as to suppose that they gently and safely promote insensible Perspiration, and thereby

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thereby greatly relieve the Lungs labouring with Catarrh. And what greatly favours this Kind of Reasoning is, that Eruptions of all Sorts, and Tumours, which are the Effect of Humours pressing outwards, are of the greatest Relief in this Disorder, and wonderfully forward the Cure. And, were it not for the great Inclination of the Humours to the weak Part, upon every the least Cold, and the many Obstacles which frustrate our Endeavours of throwing them off by the Skin, a *Phthisis* might probably be best managed in this Way, and all we should have to do would be to divert the Humours from within outwards. That this was the Opinion of Dr *Bennet*, appears from the following Words. *Prolixioris Operis esset Historias medendi deploratæ fere Sortis tabidos consignare, quorum Curationes consummarunt Sudores artificiosè præstati. In posterum ut frequentius imperentur optarim, & ut Sensuum Placitis auscultare dignetur Medicorum hæsitantium Turba.* Exer. 30. p. 78.

As to such Medicines as *strengthen* the Part, they likewise may seem as beneficial to Ulcers, as to relaxed Glands. But as Balsamicks have been much exploded, so far as they have been imagined to cleanse and consolidate Ulcers; so they seem much better adapted to the

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Of the Phthisis Pulmonaria. III

restoring the Tone of the weak Glands; it being what we expect of them in similar Cases, (*viz.*) Weakness of the seminal and urinary Passages.

Admitting therefore a *Catarrh* as the frequent Cause of a *Phthisis Pulmonaria*, we say it produces it, *first*, as the Glands are thereby obstructed; *Secondly*, as they become gleety and drain the Body; *Thirdly*, as they may be ulcerated: And this, together with Inflammation and Hæmorrhage which end in Ulcer, are the *Causæ proximæ* of a *Phthisis*. We will now endeavour to explain the Merits of *Bristol Water* in these several Differences of it.

Inflammation and Hæmorrhage may be considered either *before* they degenerate into Ulcer, or *afterwards*. Inflammation we all agree to be treated so, as, if possible, to prevent suppuration, which cannot be effected by the help of *Bristol Water*: Yet, as it often arises from such Disorders, as this Water is particularly famous for, such as scorbutick Habits of Body, Hectical Disposition from other Causes, &c. there is perhaps no better Preservative in the World, than the timely Use of it; and all such as are apprehensive of *Inflammations* from these Causes, would do well to have Recourse to it. The same also may be said of those who are subject to *Hæmoptyses* from these Causes;

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Causes; but with this Difference, that in this latter Case it distinguishes itself not only as a Preventive but a Cure, whenever it proceeds from Activity of Blood. When either of these end in Ulcer, they are to be considered as one and the same Distemper, and the Question arises, of what Benefit is *Bristol Water*? Some have imagined that it washes Ulcers and keeps them clean, and so disposes them to heal; Others, that it dries and cicatrizes them; and perhaps from the Benefit receiv'd in some Catarrhs, it may have been argued, that it cures Ulcers. But I cannot see any Reason to conclude that it does more in these, than in other Ulcers. True it is, that *Bristol Water* is particularly serviceable to Ulcers of the Lungs and Kidnies: But if we consider that the usual Causes of these Ulcers are Heat and Acrimony of the Blood, for which it is specifically good; and that of all the *Viscera* in the Body these Parts are most subject to be hurt by such Blood, the one abounding more in Blood, than any other *Viscus* of its Bigness the other being always in Motion; both of them near the Heart; it is no wonder if they seem more particularly benefited by that which allays and tempers the Effects of what would otherwise be hurtful to them.

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As to *Catarrhal* Obstructions simply considered, *Bristol* Water can be of no Service: But it may be very efficacious, if we consider them in their Causes, as arising from Acrimony of the Blood, or from weak Glands: And altho' it will not remove these Obstructions, yet it may prevent them; and not only so, but, when they are actually begun, will guard against Inflammation and Excoriation of the Lungs, the frequent Consequence of them. In *Catarrhal* Gleets there is perhaps no Remedy equal to it; *first*, as it contributes to strengthen the relaxed Glands; *secondly*, as it checks the *Hectick* Fever. Yet even here it must be acknowledged there are many Cases above the Power of it. But did People repair to this salutary Spring in the first Stages of this fatal and common Sort of Consumption, I could almost promise them a Cure, except in some phlegmatick Cases, which I have seen in cold Constitutions, where no *Hectick* has ensued, but rather a *Cachexy*. And this is a Species of *Phthisis* in which *Bristol* Water is in my Opinion of no Service.

If the Glands are ulcerated, the Case becomes in a manner desperate; glandular Ulcers being most difficult of any to be cured. And therefore *Bristol* Water is not to be relied on

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any further, than as it is an Antihectick, and may contribute to palliate the Evil, or assist the Operation of other Medicines.

I have now gone thro' all such Disorders as are more particularly benefited by *Bristol Water*, and have endeavour'd to inform the Judgment of the Physician, not only in the Distempers named, but also in other anomalous Cases, which may be reduced to the same Indications. And as I have now finish'd what is most material for a Physician to know, and run out into such a Length, as hath already disabled me from being so correct as I could wish, I hope, I may be excused proceeding any further at present. If I have acquitted my self to the satisfaction of my Readers, as to these two first Heads, I shall readily undertake the remaining Parts; If not, I have considered a Subject, which it was my Duty to search into. And if I have not informed Others, I hope, I have in some measure benefited my self.



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Fig. 1.

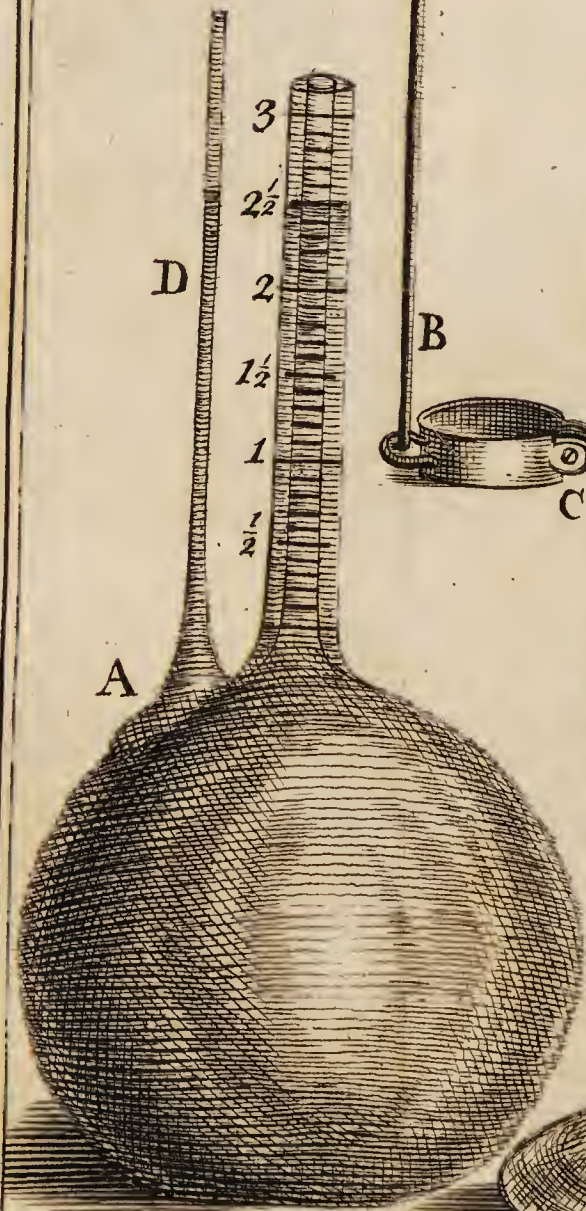


Fig. 2.

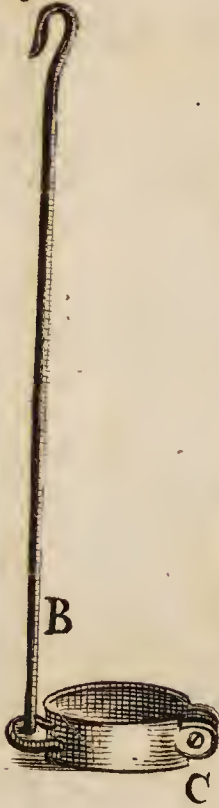


Fig. 3.

